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Prehospital care management among emergency medical services (EMS) personnel

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ABSTRACT

Although legislation establishing an administrative structure for Emergency Medical Services (EMS) in the Philippines has been proposed, it has yet to be constituted. The absence of a consolidated statutory directive has led to variations in the standardization and delivery of prehospital care across regions and organizations. This study sought to characterize the degree of implementation of prehospital care management among EMS personnel across five components: scene size-up assessment, preliminary assessment, subsequent assessment, comprehensive physical assessment, and reassessment. A cross-sectional study was conducted among 114 EMS personnel selected through purposive sampling across Metro Manila, Luzon, Visayas, and Mindanao. Data were collected from February to June 2022 using a survey instrument derived from the National Model EMS Clinical Guidelines. The questionnaire underwent pilot testing and validity and reliability assessments. Data were analyzed using frequency, percentage, composite mean, and standard deviation in IBM SPSS version 30.0. Most respondents were female (70.2%), registered nurses without an EMS background (36.8%), affiliated with government institutions (70.2%), and had one to five years of career tenure (37.7%). A high level of implementation was reported across all five components, with mean scores ranging from 3.58 to 3.74. The findings indicate a high degree of implementation of prehospital care management among EMS personnel despite the absence of a national EMS law.

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1. Introduction

The WHO (2024) cited that accidental injuries cause approximately 4.4 million deaths globally, which constitute 10% of morbidity and 8 % of total mortality annually. Trauma ranked fifth as the leading cause of severe disability and placed sixth as the cause of death in the global arena (Dahbi et al., 2025). One-third of these fatalities were caused by traffic collisions. Crash-related injuries are the primary cause of death worldwide. Tens of millions of individuals suffer from such injuries annually, which result in emergency department visits, acute care visits, hospitalization, or treatment (WHO, 2024). Aside from the above-mentioned causes of death, poor prehospital healthcare practices will negatively impact patients' health (Abebe et al., 2023). Championing solutions to these and other challenges, nations are prompted to strengthen their emergency risk management capabilities.

Prehospital emergency care is a cornerstone of the health system and serves as the primary liaison for patients. It has a significant impact in providing prompt treatment for urgent cases. The presumptions of patients and their companions of these services, particularly during emergencies, have a profound impact on their experience and the service standards (Khani et al., 2026). Providing care

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to patients in the pre-hospital field is different from the hospital environment for reasons such as being in unpredictable situations, lack of personnel and hospital equipment resources, not having complete information from patients, providing care to patients in their own living place, providing care in public communities, and care at crime scenes (Khazaei et al., 2024). Emergency medical services patients have varying levels of acuity, and the system is designed to meet their needs and be adjusted to the situation at hand. The current prehospital system comprises diverse tiers of certified and licensed providers and agencies to ensure the public receives the highest level of treatment before arriving at a medical facility (Abebe et al., 2023). Emergencies may occur anytime and anywhere, whether a severe accident or a sudden medical crisis. Such incidents require immediate assistance from trained professionals, particularly emergency medical personnel such as paramedics, Emergency Medical Technicians (EMTs), Advanced Emergency Medical Technicians (AEMTs), and Nurse-EMTs. Emergency Medical Services (EMS) aim to provide critical assistance during unprecedented events, and when delivered efficiently, these services are highly valued (Subbarao et al., 2008).

In the Philippines, although directives on emergency medical services exist, no nationwide EMS system has been established. Many EMS systems rely on emergency medical protocols. Protocol-based on-scene decision-making is influenced by many challenges; identifying these challenges can provide appropriate conditions for EMS personnel's decision-making (Safi-Keykaleh et al., 2021). One of the key problems is that, although legislation regarding emergency medical services has been proposed, it has not yet been enacted. This disparity introduces irregularities in the delivery of prehospital care management countrywide (Vista et al., 2023). Pre-hospital emergency care protocols direct EMS personnel to ensure quality service delivery. These protocols encompass scene size-up assessment, initial assessment, secondary assessment, comprehensive physical assessment, and ongoing assessment. Understanding the current level of implementation of these protocols is essential for identifying gaps and developing interventions to improve patient outcomes during the critical "golden hour" (WHO, 2024). Therefore, the purpose of this design was to describe the level of implementation of prehospital care management as perceived by the EMS personnel. It aims to assess how EMS personnel deliver quality prehospital emergency care, using a national protocol that strengthens prehospital emergency care delivery and ultimately improves patient outcomes in emergency situations.

2. Methodology

This research employed a cross-sectional descriptive design using a quantitative, non-experimental approach to examine how prehospital care management is implemented by EMS personnel across four major regions of the Philippines: Metro Manila, Luzon, Visayas, and Mindanao. The investigation focused on five principal areas of prehospital care practice: scene size-up assessment, preliminary assessment, subsequent assessment, comprehensive physical assessment, and reassessment. These components were studied to bring forth an improved comprehension of how routinely they are executed in an experiential context.

The study involved 114 EMS personnel from various public and private institutions. Participants were selected through purposive sampling to ensure those selected had relevant professional experience. In order to be considered, respondents had to be full-time EMS personnel with formal EMT or EMS training and a relevant certificate or diploma.

Data were compiled via a self-administered questionnaire adapted from the National Model EMS Clinical Guidelines in 2020. To enhance the instrument's credibility, three experts in the field validated its content for clarity and relevance. Reliability testing yielded a Cronbach's alpha of 0.73, indicating satisfactory internal consistency. The survey tool featured two sections: the first part collected demographic information, while the second part assessed the extent to which the five components of prehospital care management were implemented. Responses were expressed using a four-point Likert scale ranging from 4 (Always) to 1 (Rarely). Before heading to the main survey, a pilot test involving 30 EMS personnel was conducted to perfect the study tool and certify its consistency.

Data collection was conducted for a duration of five (5) months, from February to June 2022. After data collection, the data were encoded and analyzed using Statistical Package for Social Sciences (SPSS) version 30.0. Descriptive statistics were employed to describe the outcomes. Frequencies and percentages were used to describe the demographic characteristics of the respondents, while the composite mean ($\bar{x}$) and standard deviation (SD) were calculated to assess the level of implementation of each prehospital care component.

3. Results

The findings revealed that EMS personnel highly implemented all aspects of pre-hospital emergency care across all five components.

3.1. Demographic profile

Table 1 presents the demographic characteristics of the EMS personnel who participated in the research. Of the 114 respondents, the majority are young adults aged 20-25 (n = 71, 62.3%). This age group was followed by participants aged 36 or older (n = 34, 29.8%), and the group under 20 years old (n = 9, 7.9%) had the smallest percentage. In the gender distribution, females dominated (n = 80, 70.2%), compared to males (n = 34, 29.8%). In

relation to educational qualifications, registered nurses made up the largest segment with (n = 42, 36.8 %), followed by nurse-EMTs with (n = 38, 33.3%), EMTs with (n = 29, 25.4%), and a few counts of paramedics with (n = 5, 4.4%).

Regarding institutional affiliation, many participants are employed in government organizations (n = 80, 70.2%), while the remaining respondents are associated with the private sector (n = 34, 29.8%). As for professional tenure, the largest group of respondents had 1–5 years of service (n = 43, 37.7%), followed by those with 6–10 years (n = 37, 32.5%), less than 1 year with a percentage of (n = 19, 16.7%), and ranked last was participants with 11–15 years or more tenure with a percentage of (n = 15, 13.1%).

Table 1: Demographic profile of EMS personnel respondents of the study

Demographic profile	Frequency (n)	Percentage (%)
Age		
< 20 years old	9	7.9
20- 35 years old	71	62.3
> 36 years old	34	29.8
Gender		
Male	34	29.8
Female	80	70.2
Educational background		
Registered nurses without EMS background	42	36.8
Registered nurse with EMS background	38	33.3
EMT training	29	25.4
Paramedics diploma	5	4.4
Affiliations		
Government agencies	80	70.2
Private sector	34	29.8
Years of experience		
Less than 1 year	19	16.7
1 to 5 years	43	37.7
6 to 10 years	37	32.5
11 to 15 years and above	15	13.1
Total	N=114	100

3.2. Scene size-up assessment component

Table 2 displays the range of prehospital care management carried out, as perceived by EMS personnel, specifically focusing on the component of scene size-up assessment. The overall mean score of 3.71 (SD ± 0.060) indicates that the practices associated with scene size-up assessment are highly implemented. This indicates that EMS personnel place the highest priority on safety protocols before providing medical or trauma care and before transferring patients to hospital facilities.

Regarding the specific indicators, the highest mean score was achieved through body substance isolation (BSI) or the use of appropriate personal protective equipment (PPE) ($\bar{x}$ = 3.82, SD ± 0.405), demonstrating a firm commitment to infection control, personal safety protocols, and occupational safety standards. The lowest mean score ($\bar{x}$ = 3.63, SD ± 0.669) was gained by appraising hazards to EMS workers, patients, and bystanders. This score was still in the "highly implemented" range. The restricted range of mean scores (3.63–3.82) supports uniformity across all items, highlighting that scene size-up assessment is a standardized approach among EMS personnel.

Table 2: The degree of implementation of prehospital care management as perceived by the EMS personnel in terms of scene size-up assessment component

Scene size-up assessment	Mean	SD	Interpretation
Evaluating hazards to EMS personnel, patient, and bystander	3.63	0.669	High
Determining the mechanism of injury/nature of the illness	3.69	0.582	High
Determining the number of patients	3.72	0.524	High
Requesting additional resources if needed or need for additional help	3.74	0.499	High
Consider declaration of mass casualty incident if needed	3.67	0.543	High
Perform BSI or use appropriate PPE	3.82	0.405	High
Consider cervical spine stabilization and/or spinal care if trauma or needed	3.72	0.524	High
Composite mean	3.71	0.060	High

1.00 – 1.75: Implies poorly implemented; 1.76 – 2.50: Signifies fairly implemented; 2.51 – 3.25: Means moderately implemented; 3.26 – 4.00: Implies highly implemented

3.3. Initial assessment component

Table 3 illustrates the degree of implementation of prehospital care management, as perceived by EMS personnel, for the initial assessment component. The composite mean score of 3.64 (SD ± 0.492) reveals that the initial assessment is highly implemented in prehospital emergency care. This result indicates that EMS personnel reliably perform a primary survey before rendering trauma or medical interventions and before endorsing patients to hospital facilities.

From the list of specific indicators, the assessment of major bleeding received the highest average score ($\bar{x}$ =3.84, SD ± 0.412), highlighting the high significance of hemorrhage control as a life-saving measure. Immediately succeeding this were the evaluations of pulse, both in terms of rate and quality ($\bar{x}$ = 3.82, SD ± 0.466), and the administration of oxygen when required ($\bar{x}$ = 3.78, SD ± 0.475). These outcomes demonstrate a resolute commitment to the fundamental principles of airway, breathing, and circulation (ABC). In contrast, the lowest mean score was observed for blood glucose levels in patients with altered mental status ($\bar{x}$ = 3.29, SD ± 0.919). Despite this task being rated "high," the achieved figure suggests some variability in its implementation, perhaps due to situational constraints or the prioritization of more immediate, life-threatening conditions.

3.4. Secondary assessment component

Table 4 shows the extent to which prehospital care management is executed, as perceived by EMS personnel, with a focus on the secondary assessment component. The composite mean score of 3.61 (SD ± 0.101) reflects that secondary assessment practices are extensively implemented. This indicates that EMS personnel consistently conducted a secondary survey after the initial assessment, ensuring a thorough evaluation was performed prior to hospital endorsement.

In association with the specific indicators, the highest average scores were achieved by acquiring SAMPLE history ($\bar{x}$ = 3.71, SD ± 0.57) and regularly tracking vital signs of patients in a deteriorating

state ($\bar{x}$ = 3.76, SD ± 0.503). These outcomes highlight the need for comprehensive history-taking and sustained vital sign monitoring, which are of high-priority for diagnosing pre-existing comorbidities and assessing patient stability. On the contrary, the lowest average scores were visualized in the evaluation of patients with acute confusional state (using blood glucose, waveform capnography, or digital capnometry ($\bar{x}$ = 3.42, SD ± 0.830) and in hasty physical assessments taking on DCAP-BTLS ($\bar{x}$ = 3.59, SD ± 0.690). Even as these scores continue to be regarded as "high," their being of less value signals inconsistency in implementation, maybe attributed to contextual factors, or the categorization of more urgent life-threatening conditions (Shah et al., 2016).

Table 3: The degree of implementation of prehospital care management as perceived by the EMS personnel in terms of initial assessment component

Initial assessment	Mean	SD	Interpretation
Performing head tilt-chin lift for medical cases	3.68	0.617	High
Performing jaw thrust for trauma cases	3.54	0.754	High
Consider the use of appropriate airway management adjuncts and devices (e.g., oropharyngeal and nasopharyngeal airways, supraglottic airway device, LMA, ET tube)	3.39	0.815	High
Evaluate rate, breath sounds, accessory muscle use, retractions, patient positioning	3.66	0.607	High
Administering oxygen as appropriate with the target of achieving 94-98% saturation for most acutely ill patients	3.78	0.475	High
Consider the use of appropriate airway adjuncts and devices if apnea (not breathing)	3.45	0.810	High
Performing assessment for major bleeding	3.84	0.412	High
Assessing pulse (rate and quality)	3.82	0.466	High
Evaluate perfusion by assessing skin color and temperature/capillary refill	3.75	0.541	High
Evaluate patient responsiveness: AVPU scale (Alert, Verbal, Pain, Unresponsive)	3.78	0.511	High
Evaluate gross motor and sensory function in all extremities	3.64	0.612	High
Check blood glucose in patients with altered mental status	3.29	0.919	High
Composite mean	3.64	0.492	High

0.00 – 0.80: Implies very poorly implemented; 0.81 – 1.60: Denotes poorly implemented; 1.61 – 2.40: Signifies fairly implemented; 2.41 – 3.20: Means moderately implemented; 3.21 – 4.00: For highly implemented

Table 4: The degree of implementation of prehospital care management as perceived by the EMS personnel in terms of secondary assessment component

Secondary assessment	Mean	SD	Interpretation
Rapid physical assessment using DCAP-BTLS	3.59	0.690	High
Performing rapid head assessment (pupils, naso-oropharynx, skull, and scalp)	3.55	0.705	High
Performing rapid neck assessment (jugular vein distention, tracheal position, spinal tenderness)	3.51	0.779	High
Performing rapid chest assessment (retractions, breath sounds, chest wall deformity)	3.57	0.752	High
Performing rapid abdomen/back assessment (flank/abdominal tenderness or bruising, abdominal distention)	3.52	0.778	High
Performing rapid extremities assessment (edema, pulses, deformity)	3.61	0.673	High
Performing rapid neurologic assessment (mental status/orientation, mood/sensory)	3.60	0.713	High
Performing neurologic status assessment (AVPU or GCS)	3.70	0.609	High
Assessing patients with cardiac or respiratory complaints (pulse oximetry, 12-lead ECG, continuous cardiac monitoring, waveform capnography, or digital capnometry)	3.54	0.766	High
Assessing patients with altered mental status (check blood glucose, waveform capnography, or digital capnometry)	3.42	0.830	High
Performing at least two sets of pertinent vital signs for the stable patient	3.74	0.499	High
Performing pertinent vital signs frequently monitored for critical patients	3.76	0.503	High
Obtain OPQRST history (onset, provocation, quality of pain, radiation of pain, severity of symptoms, time of onset)	3.65	0.564	High
Obtain SAMPLE history (symptoms, allergies, medications, past medical history, last oral intake, events leading to injury or illness)	3.71	0.576	High
Composite mean	3.61	0.101	High

0.00 – 0.80: Implies very poorly implemented; 0.81 – 1.60: Denotes poorly implemented; 1.61 – 2.40: Signifies fairly implemented; 2.41 – 3.20: Means moderately implemented; 3.21 – 4.00: For highly implemented

3.5. Comprehensive physical assessment component

Table 5 exhibits the degree of implementation of prehospital care management, as perceived by EMS personnel, for the comprehensive physical assessment component. The composite mean score of 3.58 (SD ± 0.582) reveals that comprehensive physical assessment is highly implemented in prehospital emergency care. This suggests that EMS personnel conduct a systematic physical assessment prior to handing patients over to the designated facility.

Within the set of metrics, the analysis of the eyes for pupillary response and discoloration attained the highest mean score ($\bar{x}$ = 3.68, SD ± 0.554), underscoring the pivotal role of neurological evaluation in detecting early signs of head trauma, which can progress to intracranial pressure or systemic illnesses. Conversely, the lowest mean score was obtained for palpating the pelvis ($\bar{x}$ = 3.47, SD ± 0.743). Although this score implies "high," it indicates some variability in its application. This variability possibly flows from the invasive nature of pelvic assessments, the essential requirement for cautious handling to restrain worsening injuries, or the prioritization of more immediately life-threatening conditions during rapid prehospital evaluations.

3.6. Reassessment component

Table 6 displays the extent to which prehospital care management is employed, as perceived by EMS personnel, particularly underscoring the reassessment component. The composite mean score of 3.74 (SD ± 0.439) indicates that reassessment practices are widely used. This result indicates that EMS personnel consistently conduct ongoing evaluations to assess patients' health status, confirm the effectiveness of interventions, and ensure stability before hospital transfer.

Regarding specific indicators, the highest mean score was observed for checking bleeding status ($\bar{x}$ = 3.82, SD ± 0.432), underscoring the importance of

hemorrhage control as a key element in patient survival. This was closely monitored by continuously reviewing vital signs ($\bar{x}$ = 3.81, SD ± 0.418) and assessing clinical impact or patient reaction ($\bar{x}$ = 3.81, SD ± 0.477), with strict adherence to evidence-based practices that emphasize continuous monitoring and outcome analysis. Conversely, the lowest mean score was located in repeating focused assessments ($\bar{x}$ = 3.63, SD ± 0.642), which, although still rated as "high," implies slight variation. This variability might be attributed to time constraints or to prioritizing more comprehensive systemic reassessments over detailed, focused examinations in the dynamic prehospital setting.

Table 5: The degree of implementation of prehospital care management as perceived by the EMS personnel in terms of comprehensive physical assessment component

Comprehensive physical assessment	Mean	SD	Interpretation
Palpate the head beginning with the superior surface	3.57	0.651	High
Palpate the frontal surface of the face	3.52	0.694	High
Inspect the ears and look for blood or fluid	3.66	0.607	High
Assess the eyes for pupillary response and any discoloration	3.68	0.554	High
Inspect the nose and look for drainage or bleeding	3.65	0.624	High
Inspect mouth for injuries or foreign bodies	3.61	0.617	High
Palpate the neck while an assistant maintains stabilization	3.53	0.707	High
Examine the chest and look for paradoxical movement and deformity	3.56	0.679	High
Auscultate breath sounds bilaterally	3.54	0.706	High
Palpate the four quadrants of the abdomen	3.54	0.694	High
Palpate the pelvis	3.47	0.743	High
Palpate the lower extremities and assess pulse, motor function, and sensation	3.61	0.603	High
Palpate the upper extremities and assess pulse, motor function, and sensation	3.62	0.586	High
Roll with spinal precautions and assess the posterior aspect of the body	3.59	0.663	High
Composite mean	3.58	0.582	High

0.00 – 0.80: Implies very poorly implemented; 0.81 – 1.60: Denotes poorly implemented; 1.61 – 2.40: Signifies fairly implemented; 2.41 – 3.20: Means moderately implemented; 3.21 – 4.00: For highly implemented

Table 6: The degree of implementation of prehospital care management as perceived by the EMS personnel in terms of reassessment component

Reassessment	Mean	SD	Interpretation
Repeat the initial assessment (mental status, airway patency, breathing rate and quality, skin color, temperature, condition, and perfusion)	3.73	0.584	High
Re-establish patient priority	3.70	0.563	High
Repeat vital signs	3.81	0.418	High
Repeat focused assessment	3.63	0.642	High
Evaluate intervention	3.69	0.534	High
Ensure ventilation	3.80	0.445	High
Check bleeding status, if any	3.82	0.432	High
Make sure the splints are still secure	3.74	0.533	High
Check spinal immobilization status	3.73	0.537	High
Check effectiveness or response to any treatment	3.81	0.477	High
Composite mean	3.74	0.439	High

0.00 – 0.80: Implies very poorly implemented; 0.81 – 1.60: Denotes poorly implemented; 1.61 – 2.40: Signifies fairly implemented; 2.41 – 3.20: Means moderately implemented; 3.21 – 4.00: For highly implemented

4. Discussion

The majority of EMS personnel have perceived a high degree of implementation of all components of prehospital care management: scene size-up reassessment, initial assessment, secondary assessment, comprehensive physical assessment, and reassessment.

The study indicates that EMS personnel demonstrate a high level of proficiency in scene size-up assessment within prehospital care. This spotlights the ongoing emphasis on safety protocols before the start of medical or trauma procedures. Scene size-up is the first crucial step upon arriving at an emergency scene, requiring attentiveness, situational awareness, and hazard assessment to protect EMS providers, patients, and bystanders. This attentiveness, enhanced by training, fosters favorable attitudes towards patient care and enables the execution of suitable interventions (Diamla et al., 2020).

Scene size-up assessment is not only fundamental but also time-sensitive. Accordingly, personal and team safety, together with patient care, are prioritized in EMS protocols. Shorter response times on the scene are universally advantageous, correlating with higher survival rates and improved patient stabilization (Hsu et al., 2026). The "golden hour" of trauma care, especially the critical "platinum minutes" within the first 10 minutes following an accident, is pivotal in reducing preventable fatalities.

Prolonged on-scene times can exacerbate injury severity, delay definitive care, and escalate adverse effects and death (Choi, 2026). Thus, swift detection of damage extent, fast-track assessment, and reducing wait times are vital in managing prehospital trauma.

The results also center on the vitality of EMS expertise in managing complex scenarios such as patient overcrowding. Overcrowding has been linked with treatment delays, increased complications, and elevated fatality rates (Abebe et al., 2023; Macabago et al., 2020). Accurate patient prioritization, governed by emergency nurses' knowledge and triage skills, ensures that trauma patients are rightly sorted and receive timely assistance (Dahbi et al., 2025).

The focus on recognizing damage mechanisms, stabilizing the cervical spine, and using personal protective equipment demonstrates adherence to established trauma care protocols.

The second component is that EMS personnel have a high degree of implementation of the initial assessment component of prehospital care management. Conducting an initial assessment is a methodical process used to swiftly evaluate and resolve life-threatening conditions. It is the foundation of trauma care and requires a structured evaluation of airway, breathing, circulation, disability, and exposure (ABCDE) to normalize patients' conditions during emergencies. Upskilling paramedics in these core competencies is indispensable in improving trauma care delivery, specifically in high-risk environments such as road traffic collisions (Sajid et al., 2024). The complexity, uncertainty, and urgency of emergency practice require a structured approach grounded in initial assessment. It requires clinical investigation to identify potential rapid deterioration of the patient (Curtis et al., 2009). Further, the actual recommendation is to quickly assess the patient at first contact (initial assessment) and deliver the necessary treatment for life-threatening situations. The algorithm for this primary assessment is the ABCDE approach (Airway, Breathing, Circulation, Disability, and Exposure). All life-threatening injuries should be recognized during initial assessment, and the required treatment should be applied as soon as possible, without any delay. In trauma cases, the emphasis is on bleeding control and patient repositioning, reflecting adherence to established trauma care principles (Guerrero et al., 2023).

Third component, EMS personnel have a high degree of implementation of the secondary assessment component of the prehospital care management. Secondary assessment is a time for a complete clinical examination, concomitant with continuous monitoring of vital signs, monitoring of human physiologic responses, frequent reassessment, obtaining intravenous access, beginning fluid resuscitation, and applying oxygen, all of which could be lifesaving measures (Taala et al., 2026). However, there is no single definitive assessment tool (Feliciano et al., 2020). In medical cases, focusing on systematic assessment using established tools (PQRST, SAMPLE, Cincinnati Stroke Scale) demonstrates competency in medical emergency management. Also, critical thinking should be emphasized in the application of expert patient illness narratives. SAMPLE history is a tool developed to enable timely, error-free evaluation of critically ill patients and prevent diagnostic errors and delays, thereby addressing critical impediments to their safety and survival (Jayaprakash et al., 2016). Meanwhile, as Brown and Prasad (1997) noted, routine vital signs influence aspects of patient care decisions. It is a fundamental component of patient assessment while performing advanced life support interventions for prehospital patients. Checking vital signs can help providers track patient improvements or recognize the need for further intervention for worsening conditions. On the contrary, the lowest average scores were visualized in the evaluation of patients with acute confusional state (using blood glucose, waveform capnography, or digital capnometry ($\bar{x}$ = 3.42, SD ± 0.830) and in hasty physical assessments taking on DCAP-BTLS ($\bar{x}$ = 3.59, SD ± 0.690). Even as these scores continue to be regarded as "high," their being of less value signals inconsistency in implementation, maybe attributed to contextual factors, equipment readiness, triage priorities, time constraints, equipment adoption barriers, or the categorization of more urgent life-threatening conditions (Shah et al., 2016).

Fourth, EMS personnel have a high degree of implementation of the comprehensive physical assessment component of prehospital care management. This survey or assessment includes a complete physical exam, "head-to-toe," and patient medical history. Paramedics need to provide an appropriate physical assessment when providing out-of-hospital emergency health care (Vayer et al., 1994). Physical assessment is a critically important skill in the prehospital setting, but its performance is complicated by adverse environmental conditions. Physical assessment allows one to confirm the suspected diagnosis and provides information about the pattern and severity of the disease (Jain and Jain, 2021). Allowing safe practice of clinical scenarios by performing better in evaluations of comprehensive physical assessment (Taala et al., 2026). These outcomes highlight the need for comprehensive history-taking and sustained vital sign monitoring, which are of high-priority for diagnosing pre-existing comorbidities and assessing patient stability

Fifth and last, EMS personnel have a high degree of implementation of the reassessment component of prehospital care management. Part of this component involves continuous monitoring and reevaluation of the patient's condition. Evaluation of interventions and treatments, risk assessment, skin assessment, and focused assessment were also assessed at this stage (Guerrero et al., 2023). Complications associated with immobility, malnutrition, and infection are also a critical stage of injury. Medical emergencies require quick field interventions and stabilization before transport, and appropriate, rapid, timely transport decisions to definitive healthcare with fewer field interventions improve trauma outcomes (Abebe et al., 2023).

Thus, the findings revealed that EMS personnel in the Philippines demonstrate high adherence to pre-hospital emergency care protocols across all components: scene size-up assessment, initial assessment, secondary assessment, comprehensive physical assessment, and reassessment. This indicates that EMS personnel have a good understanding of and consistently apply standardized protocols in their practice. Thus, the high level of implementation is encouraging, as adequate knowledge and proper execution of pre-hospital care protocols are essential for improving patient outcomes during the critical golden hour (Subbarao et al., 2008). This can lead to low morbidity and mortality, good clinical outcomes,

positive health outcomes, and a favorable disease prognosis. Meanwhile, any inaccuracies, negligence, or malpractice arising from incompetence can pose a risk to a patient's life and impose a considerable burden on the public (Feliciano et al., 2019). Also, high performance in prehospital care within EMS management, despite the absence of a national protocol law, typically indicates that local, regional, and agency-specific protocols are highly effective, well-trained, and tailored to local needs. However, the risk of variation in this context refers to the dangers associated with a lack of standardization in protocols and policies across the entire system.

The researchers used only self-report data, which could be highly subjective, leading to potential major bias and the absence of objective measurement and verification. This is supported by the findings of high implementation of prehospital care management despite the absence of a national law for EMS. In this connection, the sampling selection is purposive. Stratified sampling was not performed because the paramedics' baccalaureate degree program is not offered in the country, making it difficult to obtain a representative sample regarding EMS personnel's educational backgrounds. Also, social desirability bias may be present, leading respondents to conform to social norms when answering surveys rather than revealing their true performance/behavior.

5. Conclusion

The majority of the EMS personnel were young adult, female registered nurses from government agencies with 1-5 years of experience. Many EMS personnel have perceived a high degree of implementation of all components of prehospital care management, namely: scene size-up assessment, initial assessment, secondary assessment, comprehensive physical assessment, and reassessment. The study recommends that future studies utilize graded return demonstration and objective structured clinical examination (OSCE), which will yield more objective data for assessing actual performance in the implementation of EMS prehospital care management. The researcher recommends that policy-making bodies draft and pass a national EMS law, rather than relying solely on international protocols in their actual performance of duties. Such a bill will help standardize prehospital care management protocols, ensuring high-quality operational guidelines, evidence-based treatment, patient safety, and professional accountability.

List of abbreviations

ABC	Airway, breathing, and circulation
ABCDE	Airway, breathing, circulation, disability, and exposure
AEMTs	Advanced emergency medical technicians
AVPU	Alert, verbal, pain, unresponsive
BSI	Body substance isolation
DCAP-BTLS	Deformity, contusion, abrasion, puncture/penetration, burns, tenderness, laceration, swelling
ECG	Electrocardiogram
EMS	Emergency medical services
EMTs	Emergency medical technicians
ET	Endotracheal
GCS	Glasgow coma scale
LMA	Laryngeal mask airway
OPQRST	Onset, provocation, quality, radiation, severity, time
OSCE	Objective structured clinical examination
PPE	Personal protective equipment
PQRST	Provocation/palliation, quality, radiation/region, severity, time
SAMPLE	Symptoms, allergies, medications, past medical history, last oral intake, events leading to injury or illness
SD	Standard deviation
SPSS	Statistical Package for the Social Sciences

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Compliance with ethical standards

Ethical considerations

Ethical approval for this study was obtained from the Research Ethics Review Committee of the Philippine College of Health Sciences, Inc., Manila, Philippines (Reference No. GS-M-10-2022), on 10 March 2022. The study was conducted in accordance with the principles of the Declaration of Helsinki. All participants received an information sheet explaining the purpose and procedures of the study and provided informed consent before participating. Participation was voluntary, and participants' privacy, confidentiality, and anonymity were maintained throughout the study. Appropriate measures were also taken to minimize potential risks to participants.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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