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Research Article

**THE ROLE OF PARAMEDICS' EVALUATIONS IN
INCREASING THE QUALITY OF MEDICAL SERVICES
PROVIDED TO THEM**

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The current study aimed to identify the role of paramedic evaluation in enhancing the quality of medical services provided to them by focusing on the issues faced in the assessment of paramedic performance as part of a comprehensive quality management system in emergency services. The evaluation must be fair and equitable, conducted according to clear and objective standards, with the goal of improving performance rather than merely assessing it. The study relied on a descriptive analytical approach based on a sample of 400 individuals. The results of the study concluded that evaluation issues require individual efforts to assess paramedics, examine their problems, and work towards resolving these issues in accordance with the nature of these individual challenges. Additionally, it is essential to develop programs and plans that can achieve these results with a degree of positivity and effectiveness, in alignment with quality management principles.

Key words: Assessment of Paramedics - Quality Standards - Quality of Medical Services - Evaluation Issues, Quality Management

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INTRODUCTION:

The evaluation of paramedics' performance is a fundamental tool for improving the quality of emergency medical services they provide. It is a systematic process for measuring the efficiency and effectiveness of paramedics in carrying out their tasks. This evaluation is not limited to theoretical and knowledge aspects only, but also includes practical skills and decision-making in emergency situations^{1,2}. Emergency medical services are a vital medical service that plays a central role in ensuring the safety of individuals and communities. In moments of crises and disasters, paramedics stand on the front lines to provide primary medical care to the injured, significantly contributing to saving lives and reducing the negative effects of accidents. The importance of emergency services in society lies in their role as the fastest and most effective means of transporting the injured to hospitals and providing them with the necessary first aid, which helps save many lives. Additionally, providing correct first aid at the scene of an accident helps minimize health complications that the injured may face, improves their chances of recovery, and the presence of a trained and qualified ambulance team provides a sense of safety and reassurance to the injured and their families, reducing levels of anxiety and stress. Emergency services^{3,6} also contribute to building a safe and healthy community by providing citizens with a sense of reassurance and security. They are a crucial link between the accident site and the hospital, facilitating the process of delivering comprehensive healthcare. Emergency services also help transport individuals with infectious diseases to hospitals for isolation and treatment, limiting the spread of diseases and epidemics. The role of emergency services goes beyond merely transporting the injured; it includes reaching the accident site as quickly as possible, assessing the condition of the injured, taking appropriate action, and providing necessary first aid such as stopping bleeding, performing CPR, stabilizing fractures, and transporting the injured to the nearest equipped hospital for emergency cases, as well as coordinating with the receiving hospital to prepare the medical team for their arrival and provide the necessary care.^{9,8}

DISCUSSION:

The services provided by ambulances can be clarified as follows: Ambulance services vary to meet a wide range of medical needs, from life-threatening emergencies to non-emergency medical transport. The services are divided as follows: emergency ambulance, which includes rapid response and immediate medical care in cases of accidents and

serious injuries such as car accidents, falls, burns, heart attacks, and strokes.^{15,8}

This type of ambulance is equipped with the latest medical equipment and resuscitation tools, and it includes a team of trained paramedics to handle various emergency situations. The second type is non-emergency ambulance, which includes transporting patients between hospitals or medical facilities or from home to the hospital. It is used to transport patients who require ongoing medical care but whose condition is relatively stable. It also includes services such as transporting patients to outpatient clinics or conducting medical examinations. The third type is air ambulance, which is used to transport patients over long distances or to remote areas that are difficult to access by land. It is used to transport patients who need specialized medical care that is not available in remote areas and is equipped with the latest medical devices while providing intensive medical care during the flight.^{14,1}

The fourth type is sea ambulance, which provides emergency services in marine areas such as ships and boats. It is also equipped to handle injuries and medical conditions that occur at sea and injuries during water sports. The fifth type is disaster ambulance, which participates in rescue and emergency operations during natural disasters or major accidents and is equipped to handle a large number of casualties at once. Thus, the services may vary^{2,13,6}

Thus, emergency services are a fundamental element in any advanced society as they contribute to the health and safety of individuals and reduce the burden on the healthcare system. They are also a key component of any healthcare system and play a crucial role in maintaining the safety and health of community members^{1,8}

- Medical services provided in ambulances

Ambulances are the first line of defense in emergencies, offering a wide range of medical services to save the lives of the injured and transport them to the hospital as quickly as possible. The services provided by ambulances can be clarified as follows:^{1,2}

First aid: This is considered one of the most important medical services provided by ambulances, as it is the first and critical step in dealing with emergency cases. It significantly contributes to saving lives and reducing health complications. First aid consists of a set of simple medical procedures that anyone can learn and apply in emergencies before specialized medical help arrives. Its aim is to preserve life by addressing critical

situations that directly threaten life, such as cardiac arrest or respiratory failure, and also to prevent the worsening of injuries by stabilizing fractures, stopping bleeding, alleviating pain, and improving the condition of the injured until they reach the hospital for definitive treatment. 4,7

The importance of first aid in ambulances lies in the rapid intervention, as first aid is provided to the injured as soon as possible, increasing their chances of survival. It also helps alleviate the pain and suffering experienced by the injured. Through first aid, the injured are prepared for safe transport to the hospital by stabilizing injuries and providing necessary care. Additionally, first aid increases the chances of survival for the injured, especially in critical cases. Ambulances are equipped with a variety of equipment and tools that assist in providing first aid, including an electrocardiogram machine used to assess heart activity, a blood pressure monitor, and a range of emergency medications such as nitroglycerin. 8,12

First aid plays an important role in saving lives and alleviating suffering. By providing appropriate training for rescuers and supplying the necessary equipment, the quality of emergency services can be significantly improved. 14,9

-The Importance of Evaluating Ambulance Services

Evaluating ambulance services is a vital process to ensure the best possible medical care for patients in emergency situations. This evaluation aims to improve the quality of services provided, identify strengths and weaknesses in performance, and develop the skills of paramedics, thereby increasing the chances of saving lives and reducing health complications. The importance of evaluating ambulance services stems from several reasons, including improving service quality, as evaluation helps identify aspects that need improvement in the provided service, such as response speed, diagnostic accuracy, and the effectiveness of medical procedures. Additionally, the evaluation ensures that paramedics are qualified to make the right decisions in emergencies and that they follow the correct procedures to ensure patient safety. 8,2

It encourages paramedics to develop professionally and adhere to high professional standards. The evaluation also provides valuable information to help healthcare institutions develop more effective training programs and assists in obtaining institutional accreditation, which enhances trust in the services provided. Furthermore, it contributes to increasing patient satisfaction with the services offered, leading to an improved reputation for the healthcare

institution. Evaluating ambulance services includes several dimensions, such as theoretical knowledge through the extent of paramedics' understanding of medical principles and first aid, as well as practical skills demonstrated by their ability to apply theoretical knowledge in practical situations, such as performing CPR or stabilizing fractures. It also measures the ability of paramedics to make sound decisions in emergencies under pressure, their capacity to communicate effectively with patients and their families, and their commitment to professional conduct in terms of punctuality, discipline, professionalism in work, and the speed of the ambulance team's arrival at the scene, as well as the accuracy of diagnosing the patient's condition. 7,9

The evaluation of paramedic services is an ongoing and essential process to ensure the provision of the best possible medical care for patients in emergencies. By regularly assessing the performance of paramedics, their strengths and weaknesses can be identified, and the necessary training and guidance can be provided to improve their performance, thereby enhancing patient health and safety and protecting their lives. 8,4

-The importance of focusing on the quality of medical services provided by paramedics

The quality of medical services provided by paramedics is one of the important elements in the healthcare system and has direct effects on the health and safety of patients. It represents the difference between life and death, and between rapid recovery and future health complications. Therefore, focusing on the quality of these services is not merely a choice but an urgent necessity for several reasons. 2,8

It is crucial to pay attention to the quality of medical services provided by paramedics, including saving lives, as prompt and effective first aid is the first step in saving the lives of the injured, especially in critical cases such as heart attacks, strokes, and severe accidents. Correct emergency procedures alleviate the pain and suffering^{1,8} experienced by the injured, contribute to improving their psychological and physical condition, and prevent proper first aid from leading to serious complications from injuries, such as infections and severe bleeding. Additionally, the quality of emergency services enhances community trust in the healthcare system and encourages people to seek help in emergencies. Thus, focusing on the quality of medical services provided by paramedics is considered one of the essential elements in improving healthcare. By emphasizing quality, better health outcomes can be achieved, trust can be strengthened between patients and paramedics, and medical errors

can be reduced, contributing to the overall public health of the community. Therefore, the quality of emergency services is a shared responsibility that falls on the shoulders of paramedics, health administrations, and the community. Through this, the best emergency care for the injured in emergencies can be ensured.^{8,3}

The factors affecting the quality of emergency services can be clarified as follows: The quality of emergency services is a fundamental factor in saving lives and reducing health complications in emergency situations.^{2,7,14}

This quality is influenced by a set of interrelated factors that can be divided into several categories:

Human factors, which include the efficiency of paramedics in terms of their professional training level, their familiarity with medical procedures and first aid, their ability to make quick decisions under pressure, and the availability of a sufficient number of paramedics to meet the needs of the area, as well as regular training courses to update and develop the skills of paramedics.^{2,7,8}

Material factors, which include the equipment of ambulances and the presence of necessary medical devices in ambulances, such as ventilators, infusion pumps, and blood pressure monitors, as well as continuous maintenance of equipment and ensuring regular servicing to guarantee their efficient operation. The condition of the roads and the availability of traffic signals also significantly affect the speed of ambulance teams reaching the accident site.^{4,8,12}

Organizational factors, which include clear and comprehensive work protocols to guide paramedics in various cases, the existence of an effective referral system for transferring patients to hospitals equipped to receive emergency cases, and cooperation with relevant authorities, including police and traffic departments, to facilitate the work of ambulance teams.^{1,12}

Community factors, which include the level of community awareness of the importance of emergency services and how to request help. The spread of health culture among community members contributes to the proper handling of emergency cases, providing a sufficient budget for purchasing necessary equipment, training personnel, and covering operating costs. The impact of these factors on the quality of emergency services is significant.^{11,5}

Therefore, the quality of emergency services is considered one of the important factors in maintaining the health and safety of the community. By identifying the factors influencing this quality, necessary measures can be taken to improve it and provide the best service to patients. To enhance the quality of emergency services, efforts should be made to develop all related aspects, starting from training paramedics to providing the necessary infrastructure.^{5,10}

-Methods for Evaluating Paramedics and Improving the Quality of Their Services

Evaluating the performance of paramedics is an ongoing and essential process to ensure the provision of the best possible medical care in emergencies. There are many ways to assess paramedics' performance and enhance the quality of services provided to patients. Various mechanisms can be used to evaluate paramedic services, including self-assessment, where paramedics evaluate their own performance; peer assessment, where colleagues assess each other's performance; supervisor assessment, where direct supervisors evaluate their performance; patient assessment, where patients evaluate the service they received from paramedics; and analysis of patients' medical records to assess the quality of care provided. Additionally, conducting simulations of medical cases places paramedics in simulated medical situations to evaluate their reactions and decision-making. Performance can also be compared against specific standards, such as the time taken to reach the scene of an incident and the effectiveness of medical procedures undertaken. It is necessary to periodically evaluate the performance of emergency service institutions to identify strengths and weaknesses and to develop plans for performance improvement.^{1,10} To ensure the effectiveness of the paramedic services evaluation program, it must include the following elements: defining the objectives the program aims to achieve, establishing the criteria on which the performance of paramedics will be evaluated, using a variety of mechanisms to assess performance, providing continuous feedback to paramedics about their performance, and offering opportunities for paramedics to develop themselves professionally. Therefore, evaluating the performance of paramedics and improving the quality of the services they provide is an ongoing process that requires commitment from all stakeholders. By applying these methods, the best possible medical care can be ensured for patients in emergency situations.^{7,6}

-Challenges in Evaluating Paramedics and Ways to Address Them

The process of evaluating paramedics faces many challenges that must be taken into consideration when designing and implementing evaluation programs. These include the changing nature of work, which involves unexpected emergency situations where it is difficult to simulate all the medical scenarios that paramedics may encounter in real practice, and the psychological pressure that paramedics are subjected to, as they work under significant stress, which may affect their performance in certain situations.^{2,8}

Additionally, the performance of paramedics is influenced by the performance of their team members, making it difficult to evaluate an individual's performance separately. Teamwork is one of the challenges facing paramedic evaluation. There is also the difficulty of measuring certain skills, as it is challenging to objectively assess personal skills such as the ability to make quick decisions under pressure, dealing with patients and their families, and social skills like effective communication and empathy with patients, which are important but hard to measure objectively. Furthermore, there is a lack of resources; designing and implementing effective evaluation programs requires significant financial resources, and evaluating paramedics' performance may take a long time, which can impact their ability to provide services.^{5,4}

It may also be challenging to find qualified experts to evaluate paramedics' performance, as some emergency centers may face a shortage of trained personnel for this purpose. Regarding privacy, it is essential to maintain the confidentiality of personal information for patients and paramedics during the evaluation process, as paramedics may bear legal responsibility for any errors that occur while providing services. Additionally, technological advancements pose one of the challenges facing paramedic evaluation, as the technology used in the field of emergency services is constantly evolving, necessitating regular updates to evaluation programs.

Thus, evaluating paramedics' performance is a complex process.^{5,12}

The evaluation of paramedics' performance is a complex process that requires careful planning and cooperation among all parties involved. By overcoming these challenges, effective evaluation programs can be developed that contribute to improving the quality of emergency services.^{10,8}

Methods:

The descriptive analytical approach is relied upon as it is the suitable methodology for the current study, allowing the researcher to reach a set of results, recommendations, and proposals that can be realistically implemented in the studied institutions. The study relied on this approach and its tool, the questionnaire.

The questionnaire was designed based on a set of axes, which are:

- Methods for evaluating ambulance services
- Problems faced in evaluating ambulance services
- Solutions to evaluation problems

Each main item of the questionnaire includes three sub-items to ensure understanding of the methods used to evaluate services, as well as the problems encountered in the evaluation process and effective, positive solutions to these problems to ensure that the evaluation process is conducted with a degree of quality.

Study setting

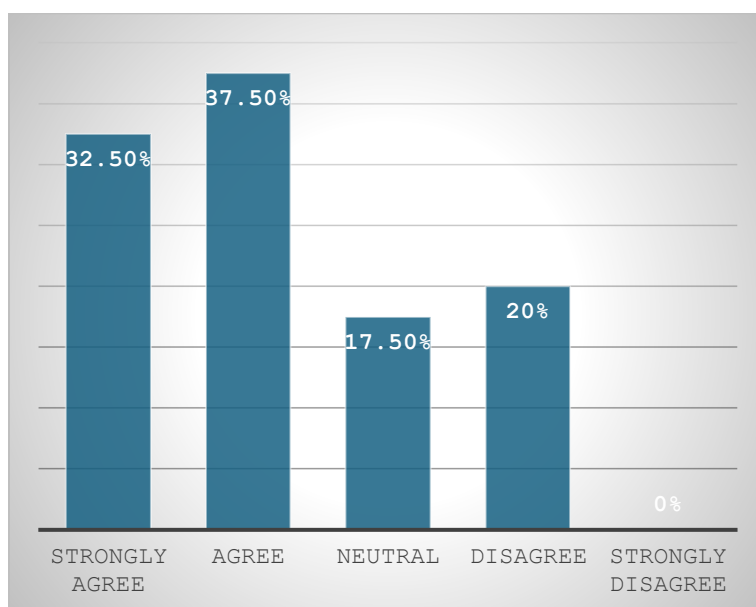
The study was conducted from August 2024 to September 2024 by distributing a questionnaire to a sample of 400 paramedics working in the Red Crescent. The questionnaire was administered electronically, and the responses from the sample were collected and analyzed statistically to derive a set of results and recommendations useful for practical application.

RESULTS:**Characteristics of study participants:**

Table 1.0 Methods for Evaluating Ambulance Services

A- Evaluation is based on the efforts made weekly.

- Evaluation is based on the efforts made weekly	percentage	Repetitions
Strongly agree	32.5%	130
Agree	37.5%	150
Neutral	17.5%	100
Disagree	20%	20
Strongly Disagree	0%	0
total	100%	400



Figer1.0 : - Evaluation is based on the efforts made weekly

The figure illustrates the sample responses on the axis of paramedic evaluation methods, indicating that most evaluation rates occur on a weekly basis.

Table 2.0 : Methods for Evaluating Ambulance Services
b- Evaluation is based on the speed of response to emergency cases

Evaluation is based on the speed of response to emergency cases	percentage	Repetitions
Strongly agree	32.5%	130
Agree	37.5%	150
Neutral	17.5%	100
Disagree	20%	20
Strongly Disagree	0%	0
total	100%	400

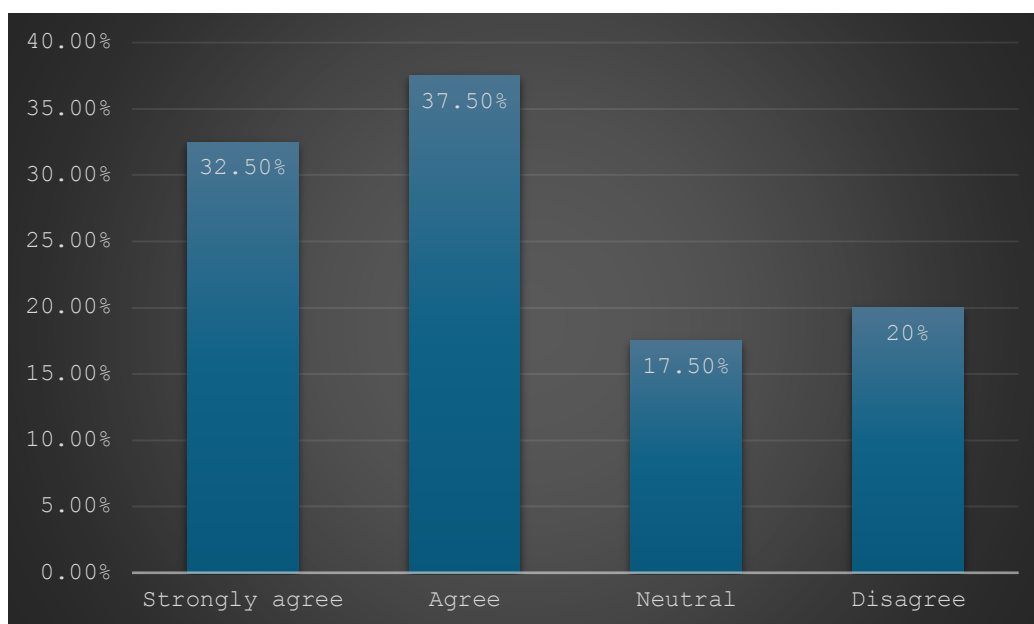
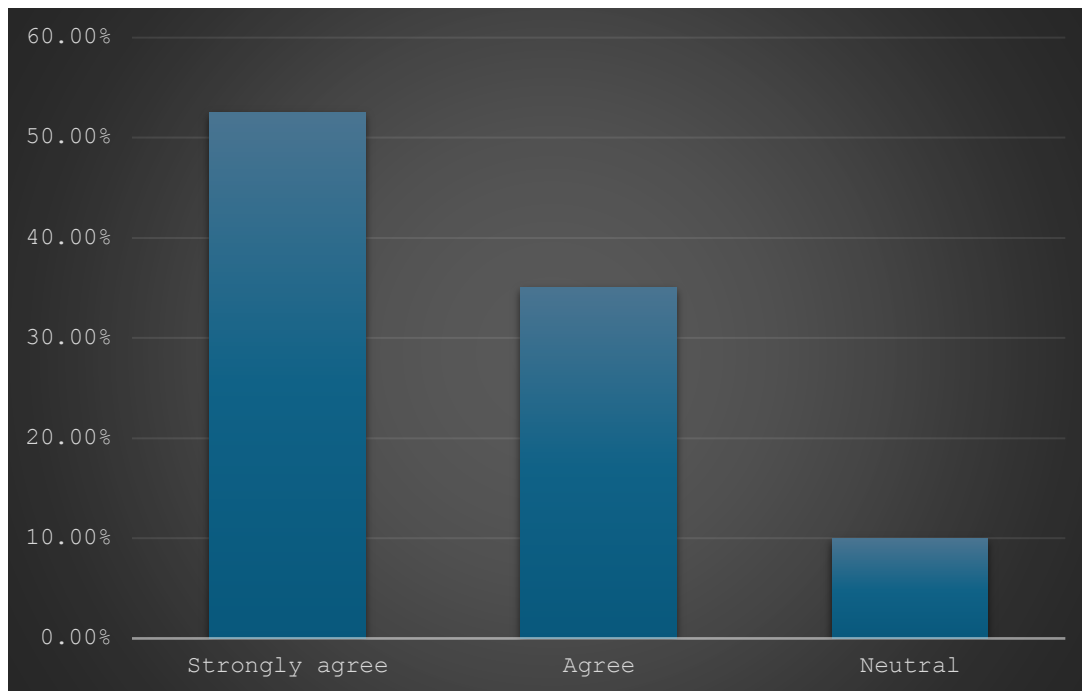


Fig2.0 : Evaluation is based on the speed of response to emergency cases

The figure illustrates the sample responses on the axis of paramedic evaluation methods, where the assessment is based on the response time to emergency cases by recording the cases and retrieving the emergency situations for which services were provided over the course of a week.

Table 3.0 Methods for Evaluating Ambulance Services
Evaluation is based on the speed of recovery of cases transported by ambulances

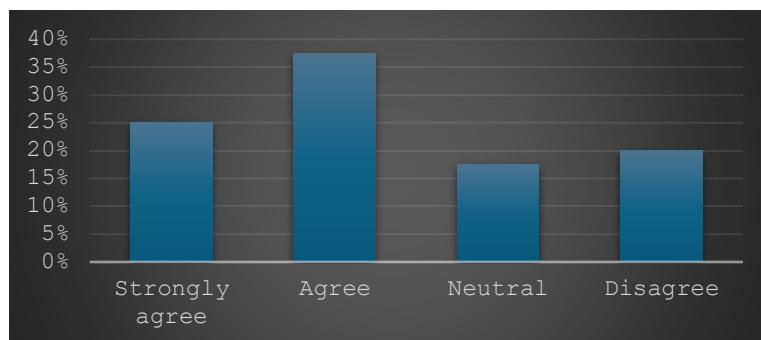
Evaluation is based on the speed of recovery of cases transported by ambulances	percentage	Repetitions
Strongly agree	52.5%	210
Agree	35%	140
Neutral	10%	40
Disagree	0%	0
Strongly Disagree	0%	0
total	100%	400



Figer3.0 : Evaluation is based on the speed of recovery of cases transported by ambulances
The figure illustrates the responses of the sample on the axis of paramedic evaluation methods, where the assessment is also based on the recovery period of the cases admitted to the hospital by ambulance, as well as the evaluation of their condition upon arrival and after receiving services, and the quality of the services provided to them in the ambulances.

Table 4.0 : Problems Encountered in Evaluating Ambulance Services)
There are issues with the evaluation mechanism itself.

There are issues with the evaluation mechanism itself.	percentage	Repetitions
Strongly agree	25%	100
Agree	37.5%	150
Neutral	17.5%	70
Disagree	20%	80
Strongly Disagree	0%	0
total	100%	400

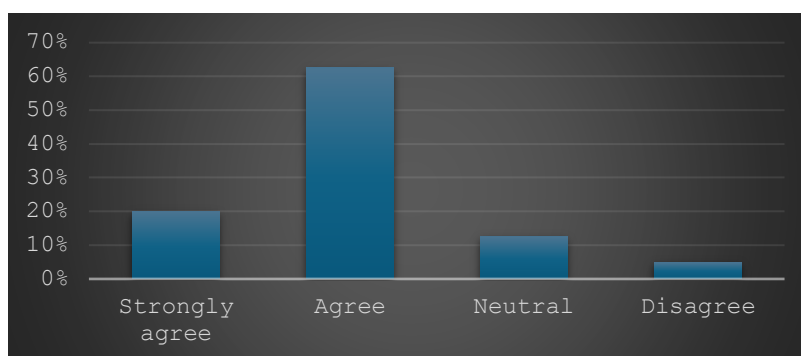


Figur4.0 There are issues with the evaluation mechanism itself.

The figure illustrates the responses of the sample regarding the challenges faced in evaluating emergency services. The responses indicate that the evaluation of emergency services encounters a range of issues, with the most significant and prominent being the evaluation mechanism itself.

Table 5.0 : Problems Encountered in Evaluating Ambulance Services
There are problems in linking the overall service evaluation to the paramedic

There are problems in linking the overall service evaluation to the paramedic	percentage	Repetitions
Strongly agree	20%	80
Agree	62.5%	250
Neutral	12.5%	50
Disagree	5%	20
Strongly Disagree	0	0
total	100%	400



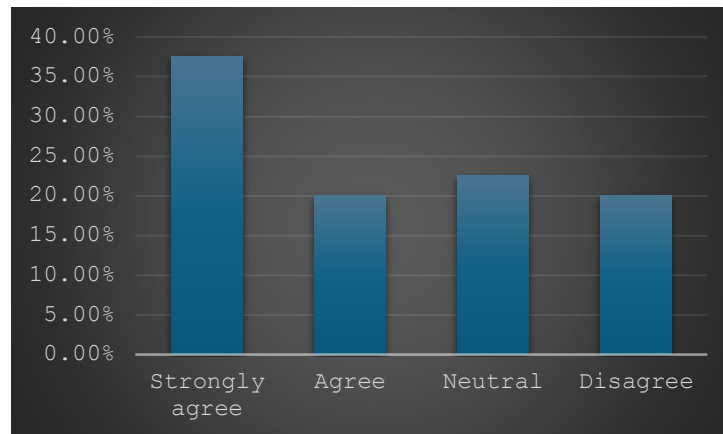
Figur5.0: There are problems in linking the overall service evaluation to the paramedic

The figure illustrates the sample responses on the axis of the issues faced in evaluating ambulance services, where the sample responses indicated that there are problems in linking the overall service evaluation to the paramedic themselves.

Table 6.0 : Problems Encountered in Evaluating Ambulance Services

There are challenges in identifying the weaknesses of paramedics and working on their development.

There are challenges in identifying the weaknesses of paramedics and working on their development.	percentage	Repetitions
Strongly agree	37.5%	150
Agree	20%	80
Neutral	22.5%	90
Disagree	20%	80
Strongly Disagree	0%	0
total	100%	400

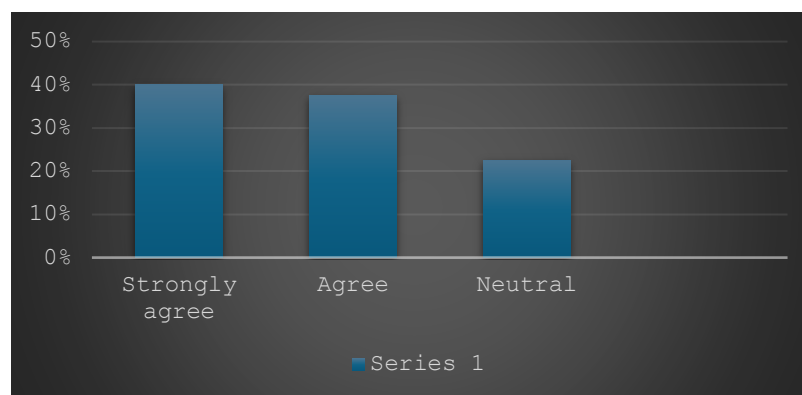


Figur 6.0 There are challenges in identifying the weaknesses of paramedics and working on their development. The figure illustrates the sample responses on the axis of the challenges faced in assessing emergency services. The sample responses indicated that there are issues in identifying the weaknesses of paramedics and working on their development

Table 7.0 Solutions to Evaluation Problems

Evaluation should be conducted subjectively

Evaluation should be conducted subjectively	percentage	Repetitions
Strongly agree	40%	160
Agree	37.5 %	150
Neutral	22.5%	90
Disagree	0%	0
Strongly Disagree	0%	0
total	100%	400



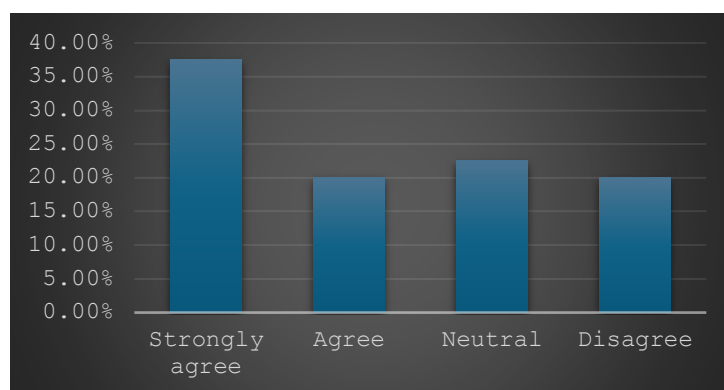
Figur 7.0 : Evaluation should be conducted subjectively

The figure illustrates the sample responses on the axis of solutions to evaluation problems, where the sample responses indicate that evaluation should be conducted subjectively.

Table 8.0 :Solutions to Evaluation Problems

Attention should be given to implementing programs that address weaknesses.

Attention should be given to implementing programs that address weaknesses.	percentage	Repetitions
Strongly agree	37.5%	150
Agree	20%	80
Neutral	22.5%	90
Disagree	20%	80
Strongly Disagree	0%	0
total	100%	400



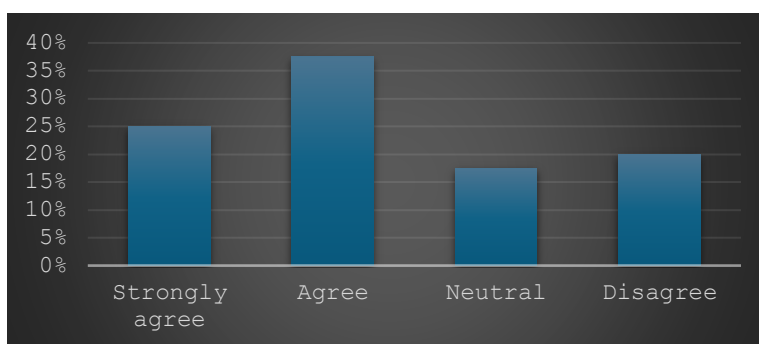
Figur 8.0 : Attention should be given to implementing programs that address weaknesses.

The figure illustrates the sample responses on the axis of solutions to evaluation problems, where the sample responses indicated that attention should be given to implementing programs that address the weaknesses.

Table 9.0 : Solutions to Evaluation Problems

Efforts should be made to develop the evaluation methods themselves.

Efforts should be made to develop the evaluation methods themselves.	percentage	Repetitions
Strongly agree	25%	100
Agree	37.5%	150
Neutral	17.5%	70
Disagree	20%	80
Strongly Disagree	0%	0
total	100%	400



Figur9.0 Efforts should be made to develop the evaluation methods themselves.

The figure illustrates the sample responses on the axis of solutions to evaluation problems, where the sample responses indicated that there is a need to work on developing the evaluation methods themselves.

Table: 3,0 the mean, standard deviation, and relative importance of sample responses:

The item	The mean	Standard deviation	relative
Evaluation is based on the efforts made weekly.	3.54	0.918	%70.89
Evaluation is based on the speed of response to emergency cases.	3.96	1.023	%59.24
There are issues with the evaluation mechanism itself.	3.67	1.398	%53.31
There are problems in linking the overall service evaluation to the paramedic themselves.	2.96	1.363	%59.24
There are challenges in identifying the weaknesses of paramedics and working on their development	3.46	0.668	%49.11
Evaluation should be conducted subjectively.	3.54	0.922	%70.89
Attention should be given to implementing programs that address weaknesses.	3.54	0.918	%70.89
Efforts should be made to develop the evaluation methods themselves.	3.96	1.023	%59.24

The results of the study regarding the mean, standard deviation, and relative weight of the responses indicate a consensus that the evaluation methods for emergency services require development and renewal. This is due to the fact that they are based on a set of peripheral issues, and there are no developmental plans in place that could assist paramedics in enhancing their performance and improving the quality of services provided

It is noteworthy that the study recommends the necessity of working on the development of the evaluation methods themselves, which in turn would lead to increased quality and efficiency rates provided by paramedics for emergency cases.

CONCLUSION:

The study indicated that there are several challenges facing the evaluation of paramedics, both in terms of the method used for assessment and the ability to quantify evaluation results. Additionally, it highlights the potential for implementing programs that could address issues and rectify weaknesses by focusing on establishing clear objectives and specific criteria. The objectives of the evaluation should be explicit and measurable, such as reducing response times, increasing the rate of successful resuscitation, improving patient satisfaction with services, and defining specific performance standards for each task performed by the paramedic. These tasks include adhering to medical protocols, effective

communication with patients, and proper documentation of cases.

Furthermore, the evaluation tools should be diverse, combining various methods such as questionnaires, direct observation, analysis of medical records, and case simulations. Encouraging paramedics to self-assess and to seek feedback from colleagues regarding their performance is also essential. A supportive environment for development can be fostered through specialized training programs aimed at enhancing paramedics' skills and medical knowledge, providing constructive feedback on their performance, and assisting them in identifying strengths and weaknesses.

Encouraging paramedics to pursue opportunities for learning and self-development, as well as utilizing technology and quality management systems to collect and analyze data related to paramedic performance, is crucial. The use of smart applications can facilitate the evaluation process and provide detailed reports. Attention to the mental health of paramedics should also be prioritized by offering psychological support programs to help them cope with work-related stress. Additionally, linking evaluation results to career development opportunities, promotions, and providing both financial and moral incentives is recommended.

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Pursuit:

This questionnaire was designed to identify the methods of evaluating paramedics that are being carried out and accordingly to study the problems and challenges that paramedics face during the evaluation process from their point of view and also to identify a set of suggestions that would address the problems of evaluation and make it more effective.

1- Methods for Evaluating Ambulance Services

a- Evaluation is based on the efforts made weekly.

Strongly agree ()

Agree ()

Neutral ()

Disagree ()

Strongly disagree ()

b- Evaluation is based on the speed of response to emergency cases.

Strongly agree ()

Agree ()

Neutral ()

Disagree ()

Strongly disagree ()

c- Evaluation is based on the speed of recovery of cases transported by ambulances.

Strongly agree ()

Agree ()

Neutral ()

Disagree ()

Strongly disagree ()

2- Problems Encountered in Evaluating Ambulance Services

a- There are issues with the evaluation mechanism itself.

Strongly agree ()

Agree ()

Neutral ()

Disagree ()

Strongly disagree ()

b- There are problems in linking the overall service evaluation to the paramedic themselves.

Strongly agree ()

Agree ()

Neutral ()

Disagree ()

Strongly disagree ()

c- There are challenges in identifying the weaknesses of paramedics and working on their development.

Strongly agree ()

Agree ()

Neutral ()

Disagree ()

Strongly disagree ()

3 - Solutions to Evaluation Problems

a-Evaluation should be conducted subjectively.

Strongly agree ()

Agree ()

Neutral ()

Disagree ()

Strongly disagree ()

b- Attention should be given to implementing programs that address weaknesses.

Strongly agree ()

Agree ()

Neutral ()

Disagree ()

Strongly disagree ()

c- Efforts should be made to develop the evaluation methods themselves.

Strongly agree ()

Agree ()

Neutral ()

Disagree ()

Strongly disagree ()