Assess the Preparedness Regarding Triage Skills Amongst Emergency Medical Professionals in Pune, India

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Abstract

Background: The word Triage means to sort or sieve and has originated from the French word "trier". The concept of triage was first applied in the military to evaluate and categorize wounded soldiers quickly during the battle probably around 1792. Emergency medical services (EMS) professionals are the first responders during mass casualty incidents. Successful application of triage requires continued education and practice in real clinical situations. Hence, it is essential to assess the adequate preparedness with regards to triage among EMS Professionals on a regular basis.

Objective: To assess the preparedness regarding triage skills amongst Emergency Medical Professionals in Pune, India.

Methodology: The study was conducted amongst 120 Emergency Medical Professionals in Pune, India. A

previously tested and validated Triage Skill questionnaire designed by Sitotaw Kerie *etal* and published in 2018 was utilized for the study. Participants were asked to respond to each item using 1-5 Likert scale. Questionnaire was administered to the participants through online mode after obtaining informed consent.

Discussion: The results indicate that participants tended to over prioritize indicating lack of knowledge of degree of care required by different patients. Majority of the participants scored between 146 to 180 corresponding to high degree of confidence in their skills regarding triage and management of patient. The scores obtained in the scenarios do not correlate with the self-perceived confidence.

Conclusion: The study throws light on the over prioritization bias amongst EMS professionals. Although the study has been conducted amongst 120 EMS Professionals and is limited, yet it provides insight on the various aspects of triage assessment. Regular hands on training is required to improve the knowledge and skill set of the EMS professionals with respect to triage that can be extremely useful in emergency situation.

Keywords: *Emergency Medical Services Professional, Triage Skills, Preparedness, Prioritize, Self-Perceived*

Background

The word Triage means to sort or sieve and has originated from the French word "trier"[1]. The triage sieve is a method where patient is sorted into immediate, urgent and non-urgent depending upon his/her current condition and has immense utility in mass casualty incidents. This method is widely used across the globe and in our country[1].

The concept of triage was first applied in the military to evaluate and categorize wounded soldiers quickly during the battle probably around 1792. It was later adapted by the healthcare community to categorize patients based on the severity of their injuries and to segregate them in the order of priority of care and monitoring.[2]

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Triage being a dynamic process requires regular review depending on the emergent state of the patient [3].

Emergency medical services (EMS) professionals are the first responders during mass casualty incidents. Timely provision of the required medical aid by EMS professionals can significantly impact the survival of patients.[4]

Kelly AM *etal*[5] in a study in 2001 emphasized that triage skills if not carried out in a standardized way can compromise the clinical outcome of the patients. Robert B Dunne *etal* [6] in 2003 in his study further reiterated this where he emphatically stated that EMS personnel unaided by triage protocols or specific training could not reliably identify those patients in need of emergency medical treatment.

Successful application of triage requires continued education and practice in real clinical situations. In this regard, a study by J E Pointer *etal* [7]in 2001 holds significance where he concluded that using written guidelines by Paramedics affects triage accuracy. Hence, it is essential to assess the adequate preparedness with regards to triage among EMS Professionals on a regular basis.

Objective:

To assess the preparedness regarding triage skills amongst Emergency Medical Professionals in Pune, India.

Methodology

The study was conducted amongst 120 Emergency Medical Professionals in Pune, India. A previously tested and validated Triage Skill questionnaire designed by Sitotaw Kerie *etal*[8] and published in 2018 was utilized for the study. The original sixty two item questionnaire consisted of 2 items assessing the Knowledge , 8 items in the form of Scenario assessing the attitude, 11 items denoted to the practices with regards to assessing the triage , 4 items pertaining to review of equipment required and 37 items pertaining to self-perceived triage skills was meant for nurses. The eighteen items that were exclusively pertaining to nursing were left out.

The 44 items questionnaire consisted of 2 parts. First part consisted of eight items in the form of MCQ pertaining to the attitude of the EMS Professionals related to situations requiring triage where participants were supposed to mark the single best option. A score of 1 was given to every correct option and a 36-item questionnaire with three dimensions, including rapid assessment, patient categorization, and patient allocation. Participants were asked to respond to each item using 1-5 likert scale: (1 = need improvement, 2 = poor, 3 = fair, 4 =good, and 5 = very good).

Questionnaire was administered to the participants through online mode after obtaining informed consent. Responding to all questions were mandatory. The participants were given two days to fill the questionnaire. Any queries pertaining to questionnaire was clarified during data collection.

All 120 participants reverted with filled questionnaire. The data was tabulated and statistically analyzed with the help SPSS version 23.

Result

Table 1: Demographic Data

Demographics	
Age	21- 25 Years: 69% 26- 30 Years: 23% More than 30:8%
Sex	Male: 23% Female: 77%
Qualification	BHMS: 52% BAMS: 33% BUMS: 11% Others: 3%

Cont... **Table 1: Demographic Data**

Work Experience	1-5 Years: 57% 6-10 Years: 33% 11-15 Years: 10%
Do you currently work in triage room	Yes: 72% No: 24% Maybe: 4%
Did you attend any training, course or workshop during the past three years	Yes: 53% No: 47%
Type of Training Attended	Basic Life Support(BLS): 78% Advanced Cardiac Life Support (ACLS): 2% Emergency Care: 46% Disaster Management: 15% Triage Course: 16%

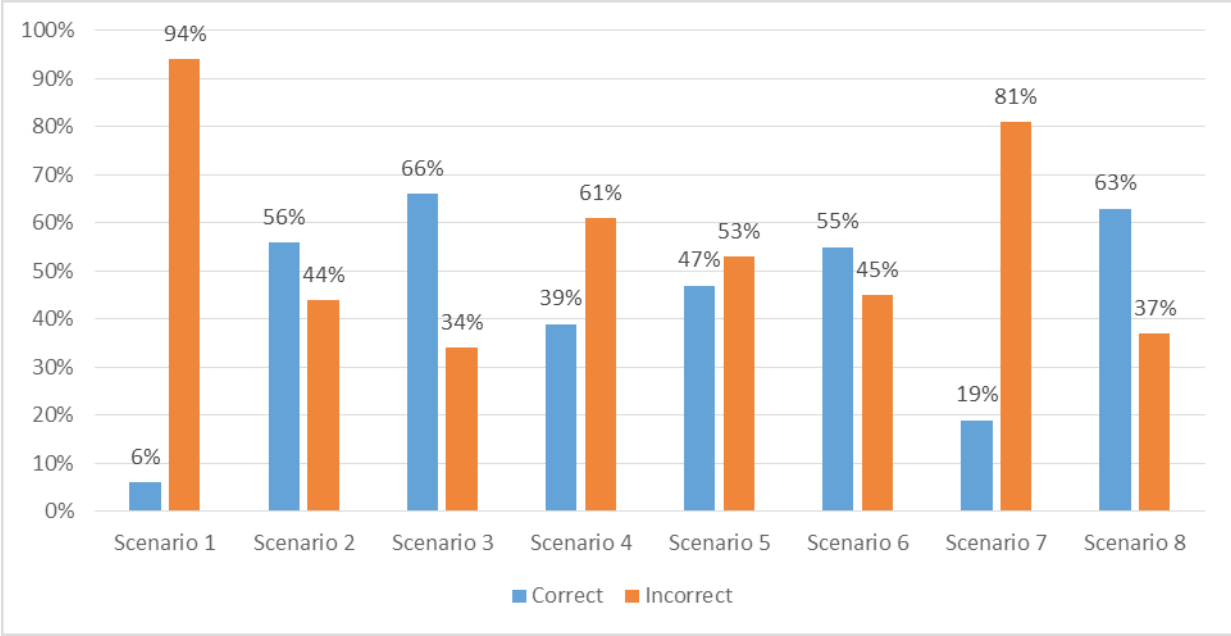

Figure 1.

As shown in figure 1, majority of the participants could not correctly prioritize the patients in triage situations in 4 out of 8 scenarios. A mean score of 3.48 with standard deviation of 1.25 was obtained in the triage prioritization of scenarios.

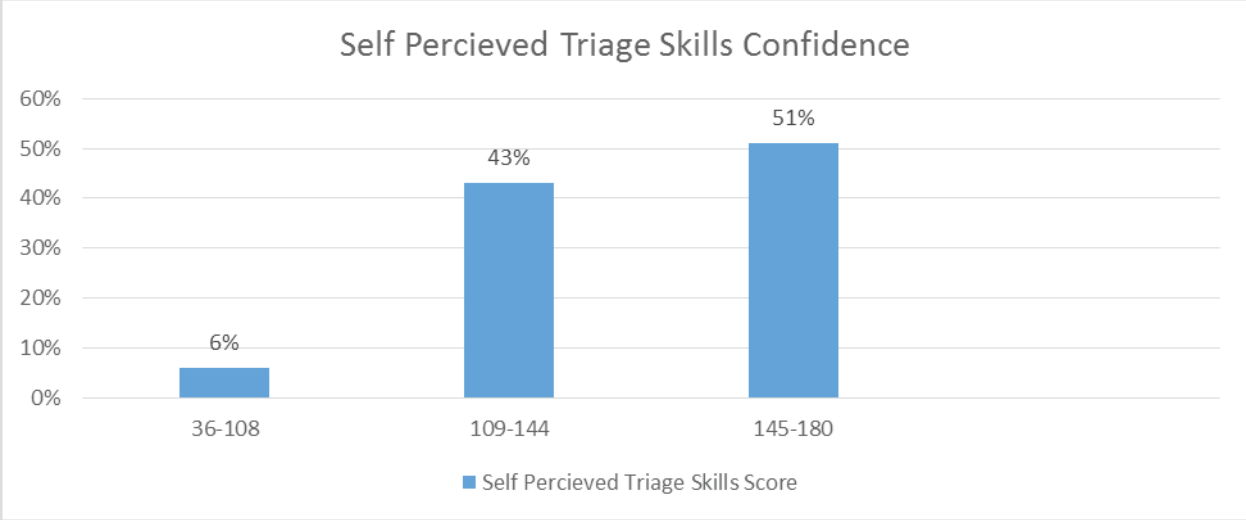

Figure 2.

In Figure 2, Score of 36-108 corresponds to scale of 1-3, 109- 144 corresponds to scale of 3-4 and 145 to 180 corresponds to scale of 4-5. As many as 51% of participants had scored well in the self-perceived triage skills confidence whereas 6% scored extremely low with 36 as the lowest and 180 as the highest score.

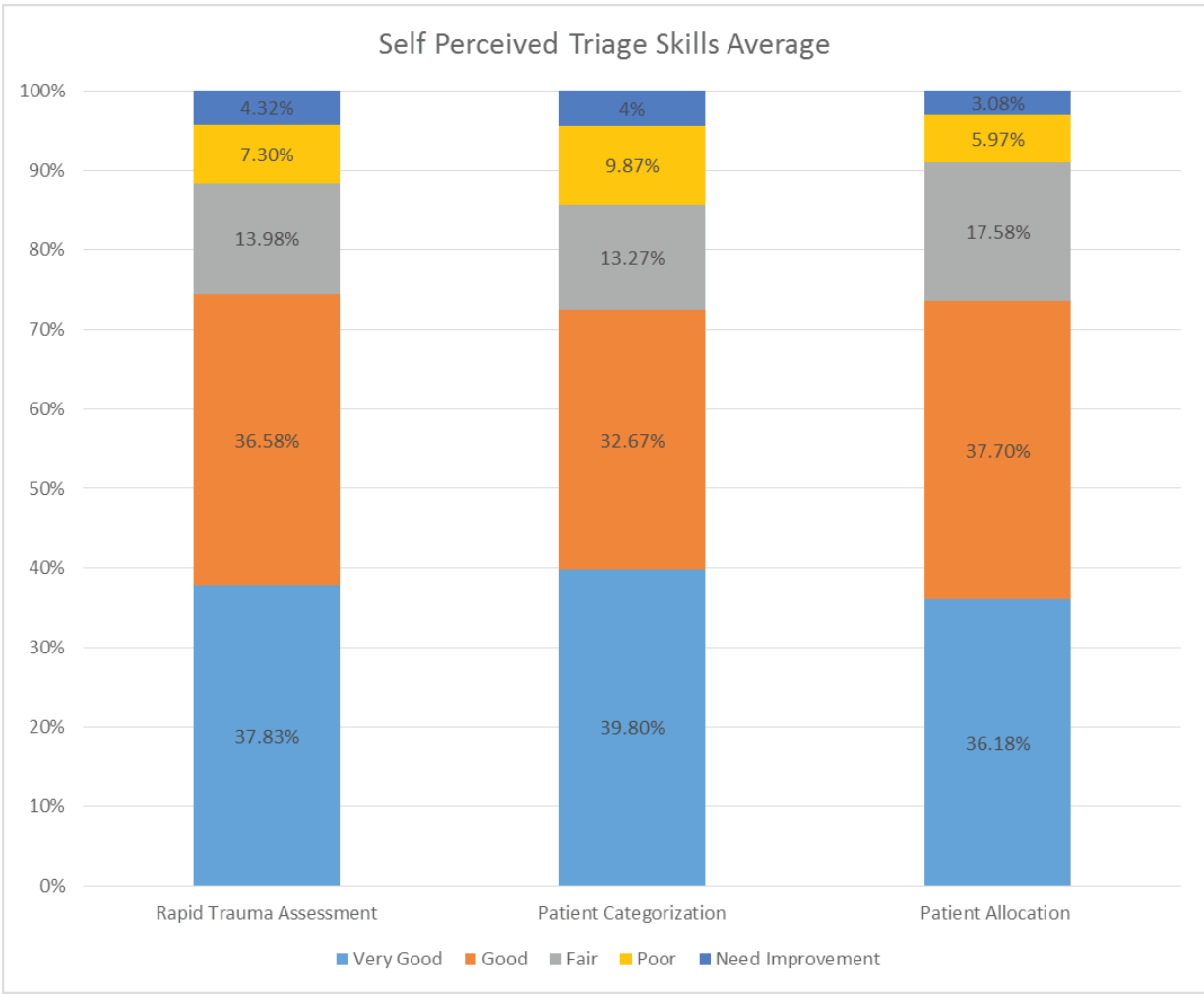

Figure 3.

As shown in figure 3, pertaining to self- perceived triage skills, majority of the participants showed high degree of confidence in their skills regarding triage and management of patient.

Discussion

Accurate prioritization of patients based on the severity of conditions play a significant role in allocation of limited resources in an emergency situation. EMS professionals are therefore expected to be well versed and possess a high degree of confidence in classifying the patient and allocating them the available resources.

The first part of the questionnaire consisted of 8 short scenarios describing different clinical pictures and the participants were expected to prioritize them into P1(immediate attention), **P2(intermediate or urgent care needed) and P3(delayed care).The results indicate that participants tended to over prioritize indicating lack of knowledge of degree of care required by different patients. In real clinical situation over prioritization of relatively stable cases shall lead to resource depletion and impact the survival of highly unstable patients. This tendency of over prioritizing can be corrected by subjecting the participants to regular case based scenario and simulation teaching.**

In second part of questionnaire, the participants had to self-assess their skills pertaining to rapid Patient assessment, patient Categorization and Patient Allocation with respect to triage. Self-perceived assessment is an accurate indicator of self-efficacy of the EMS professional. Majority of the participants scored between 146 to 180 corresponding to high degree of confidence in their skills regarding triage and management of patient.

Rapid Patient Assessment comprises Head to Toe assessment of the patient, identifying the life-threatening situations and managing them immediately so that the patient's situation do not deteriorate. Airway, Breathing, Circulation and Cervical Spinal Immobilization form the cornerstone of prehospital patient assessment and play an especially important role in determining the patient outcome. Majority of the participants were confident on most parameters of Rapid Patient assessment except low score was obtained on assessment of patency of airway by means of feeling for air. This could be attributed to the change in guidelines which suggest looking for chest rise instead of feeling for air entry to confirm the patency of airway.

In terms of Patient Categorization, majority of the participants were confident about their ability to categorize the patient, accord priority and identify immediate life-threatening injuries and managing them. However, the scores obtained in the scenarios do not correlate with the self-perceived confidence. This indicates need for more hands-on training with components of feedback and evaluation which shall clarify their concepts.

In terms of Patient Allocation, more than half of the participants were highly confident that they shall be able to allocate the patient to the right level of care after categorization. However correct patient allocation is the function of accurate prioritization.

Conclusion

The study was intended to gather perspectives on the triage skills of EMS professionals. The study throws light on the over prioritization bias amongst EMS professionals. Although the study has been conducted amongst 120 EMS Professionals and is limited yet it provides insight on the various aspects of triage assessment. Regular hands on training is required to improve the knowledge and skill set of the EMS professionals with respect to triage that can be extremely useful in emergency situation.

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