

**FP01 VALIDITY AND
RELIABILITY OF EMERGENCY
SEVERITY INDEX (ESI) AND
CONVENTIONAL THREE-TIER
TRIAGE SYSTEM IN EMERGENCY
DEPARTMENT HOSPITAL**

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INTRODUCTION

A valid and reliable triage system is imperative to an ED in efficiently separating those severely ill patients from the crowds and to be triaged into critical zone whereby treatment and resuscitation work could be carried out in time. ESI is a five-tier triaging system currently practiced in the United States. It triages all type of patients (trauma/ non-trauma, pediatrics/ adults/ geriatrics) based on a single algorithm.

MATERIAL AND METHODS

This study was conducted in ED Hospital USM over two study periods. First three months, a total of 300 patients were triaged under three-tier triaging system. Subsequent three months, 280 patients were triaged under ESI. The patients were triaged by junior paramedics and the triage records were kept and later re-triaged by senior paramedics. The inter-rater reliability were compared using kappa statistics. The acuity ratings given by junior paramedics were compared with the expert panel's acuity ratings to determine sensitivity and specificity for each acuity level for both ESI and three-tier triaging system. The over-triage rate, under-triage rate, amount of resources use, admission and discharge rate were also determined.

RESULTS

The inter-rater agreement for three tier triaging system was 0.81 while the agreement for ESI triaging system was 0.75. ESI had higher average sensitivity of 74.3% and specificity of

94.4% compared to three-tier's average sensitivity of 68.5% and specificity of 87.0%. The average under-triage rate and over-triage rate for ESI was 10.7% and 6.2%, lower compared to three-tier average under-triage rate of 13.1% and over-triage rate of 17.1%. The urgency levels of both ESI and three-tier triaging system were associated with increased admission rate and resources used in ED.

DISCUSSION

The ESI had inter-rater reliability that was comparable to the three-level triaging system and had better validity than the existing three-tier triaging system