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Comparing the SALT and START Triage System in Disaster and Mass Casualty Incidents: A Systematic Review

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Abstract : Triage is a complex decision-making process that aims to categorize a victim's level of acuity and the need for medical assistance. Two common triage systems have been widely used in Mass Casualty Incidents (MCIs) and disaster situation are START (Simple triage algorithm and rapid treatment) and SALT (sort, asses, lifesaving, intervention, and treatment/transport). There is currently controversy regarding the effectiveness of SALT over START triage system. This systematic review aims to investigate and compare the effectiveness between SALT and START triage system in disaster and MCIs setting. Literatures were searched via systematic search strategy from 2009 until 2019 in PubMed, Cochrane Library, CINAHL, Scopus, Science direct, Medlib, ProQuest. This review included simulated-based and medical record -based studies investigating the accuracy and applicability of SALT and START triage systems of adult and children population during MCIs and disaster. All type of studies were included. Joana Briggs institute critical appraisal tools were used to assess the quality of reviewed studies. As a result, 1450 articles identified in the search, 10 articles were included. Four themes were identified by review, they were accuracy, under-triage, over-triage and time to triage per individual victim. The START triage system has a wide range and inconsistent level of accuracy compared to SALT triage system (44% to 94. 2% of START compared to 70% to 83% of SALT). The under-triage error of START triage system ranged from 2.73% to 20%, slightly lower than SALT triage system (7.6 to 23.3%). The over-triage error of START triage system was slightly greater than SALT triage system (START ranged from 2% to 53% compared to 2% to 22% of SALT). The time for applying START triage system was faster than SALT triage system (START was 70-72.18 seconds compared to 78 second of SALT). Consequently; The START triage system has lower level of under-triage error and faster than SALT triage system in classifying victims of MCIs and disaster whereas SALT triage system is known slightly more accurate and lower level of over-triage. However, the magnitude of these differences is relatively small, and therefore the effect on the patient outcomes is not significance. Hence, regardless of the triage error, either START or SALT triage system is equally effective to triage victims of disaster and MCIs.

Keywords : disaster, effectiveness, mass casualty incidents, START triage system, SALT triage system
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