

The Impact of Emergency Department Overcrowding with Non-Urgent Visits on Mortality at King Khalid National Guard Hospital in Jeddah

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Background: Emergency department (ED) overcrowding with non-urgent cases is a significant public health problem with several consequences, such as prolonged waiting time and delayed care for more acutely ill patients. Triage systems are established to determine the urgency of patients in the EDs. An example is the Canadian Triage and Acuity Scale (CTAS) which is a 5-category scale. Patients who are classified as CTAS 1, 2, and 3 are urgent, while CTAS 4 and 5 are non-urgent. Previous studies in Saudi Arabia show that 50-60% of ED visits are non-urgent, but did not investigate their association with mortality. Therefore, we aimed to determine the relationship between non-urgent ED visits and patients' mortality.

Methods: A cross-sectional retrospective study was conducted at King Khalid National Guard Hospital in Jeddah. A convenient sample was retrieved from the BestCare database by including all ED visits which were categorized in CTAS from June 2016 to December 2018. Our variables were the CTAS category, gender, and age for each visit. Additionally, we obtained the total number of mortalities in the ED, during inpatient care, and overall mortality for each month. Data analysis was done using JMP software. After assessing the normality, the Spearman correlation test was used to evaluate the relationship between the ratio of non-urgent visits for each month and mortality during that month. Furthermore, we identified the most crowded periods of the ED within a year after we combined the same month from 2017 and 2018, so we had twelve pooled months.

Results: A total of 127888 ED visits were enrolled in the study after the exclusion of 30407 visits, which were unspecified in CTAS. We found that 81% of the ED visits were non-urgent. Around 53% of the non-urgent patients were female, and the majority of them were adult patients aged between 18 and 44 years. The most crowded periods of ED visits were in the last three months of the year from October to December. There was no correlation between non-urgent visits and overall mortality, Spearman's coefficient (ρ) = 0.014, P = 0.938.

Conclusion: There is no association between non-urgent visits and mortalities. The generalizability of the results is limited because the study was conducted in a single-center, and further studies are needed.