

# Validation of a Tool to Predict Violence and Aggression by Behavioral Health Patients

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## BACKGROUND

- Assessment tools measuring risk for patients' violent behavior have demonstrated effectiveness in identifying patients with potential for aggressive behavior, however we were unable to identify any that have been validated for use in an emergency department (ED).
- The Dynamic Appraisal of Situational Aggression (DASA) is a tool that was constructed in 2006 using data from an inpatient psychiatric setting and was validated in that environment to demonstrate predictive capability at identifying patients who will exhibit physical or verbal aggression within the next 24 hours.

Dynamic Appraisal of Situational Aggression (DASA) 4 EAST AND ED ONLY

Irritability	<input type="checkbox"/> 0=Normal behavior for patient	<input type="checkbox"/> 1=Increase in described behavior
Impulsivity	<input type="checkbox"/> 0=Normal behavior for patient	<input type="checkbox"/> 1=Increase in described behavior
Unwillingness to follow directions	<input type="checkbox"/> 0=Normal behavior for patient	<input type="checkbox"/> 1=Increase in described behavior
Sensitivity to perceived provocation	<input type="checkbox"/> 0=Normal behavior for patient	<input type="checkbox"/> 1=Increase in described behavior
Easily angered when requests are denied	<input type="checkbox"/> 0=Normal behavior for patient	<input type="checkbox"/> 1=Increase in described behavior
Negative attitudes	<input type="checkbox"/> 0=Normal behavior for patient	<input type="checkbox"/> 1=Increase in described behavior
Verbal threats	<input type="checkbox"/> 0=Normal behavior for patient	<input type="checkbox"/> 1=Increase in described behavior

Final Risk Rating (0-1 Low, 2-3 Moderate, >3 High)

## OBJECTIVES

- Establish the predictive validity of the DASA in the ED clinical environment,
- Determine the potential clinical utility in reducing the incidence of violence or aggression when applied to an ED setting,
- Set operational standards regarding early use of non-invasive measures,
- Explore the feasibility of the tool's implementation.

## METHODS

The study was designed as a retrospective cohort study that reviewed patients' medical records who visited the Emergency Department at Ronald Reagan UCLA Medical Center, a Level 1 trauma center with inpatient psychiatric services, from May 1- December 31, 2018.

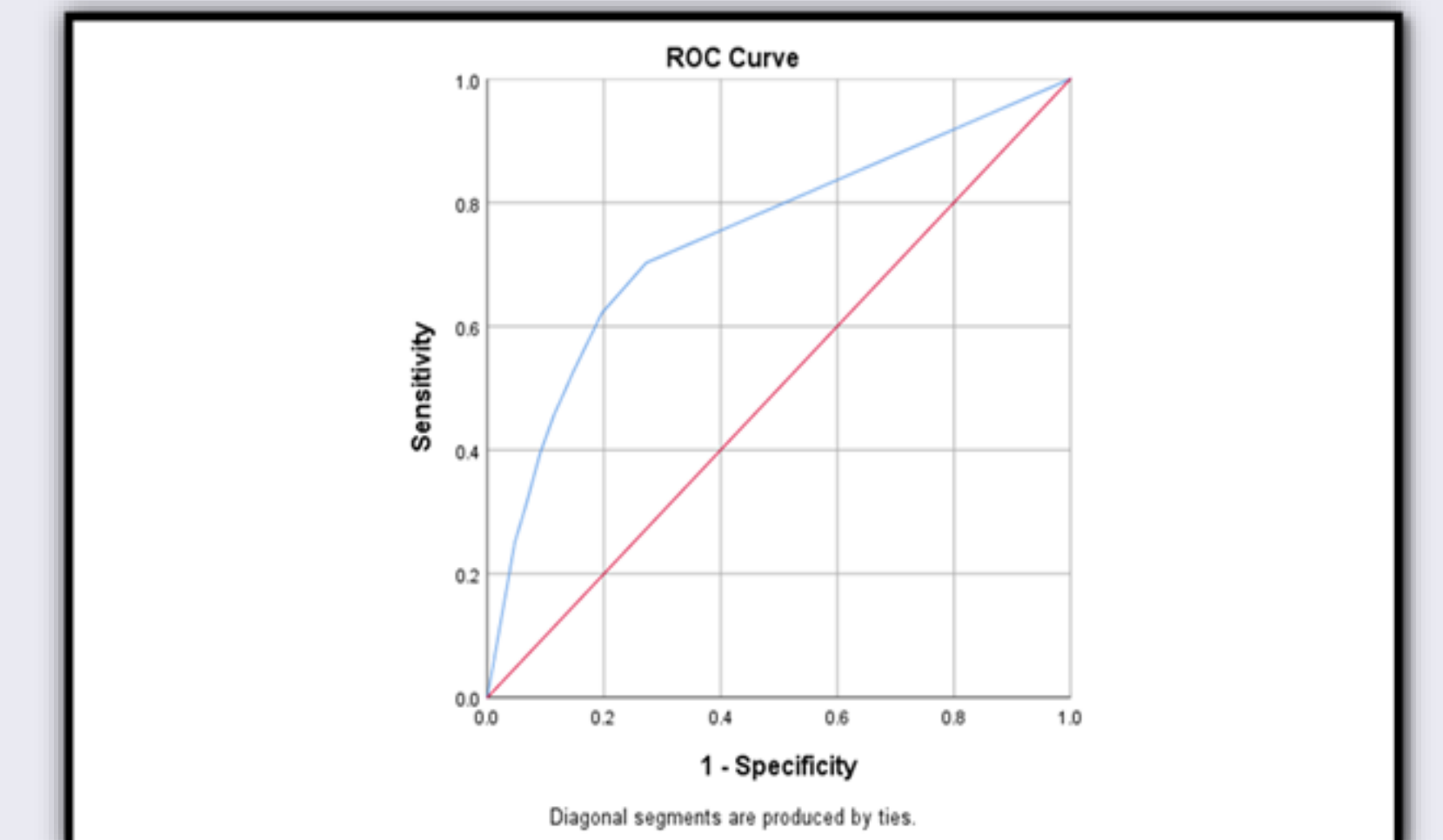
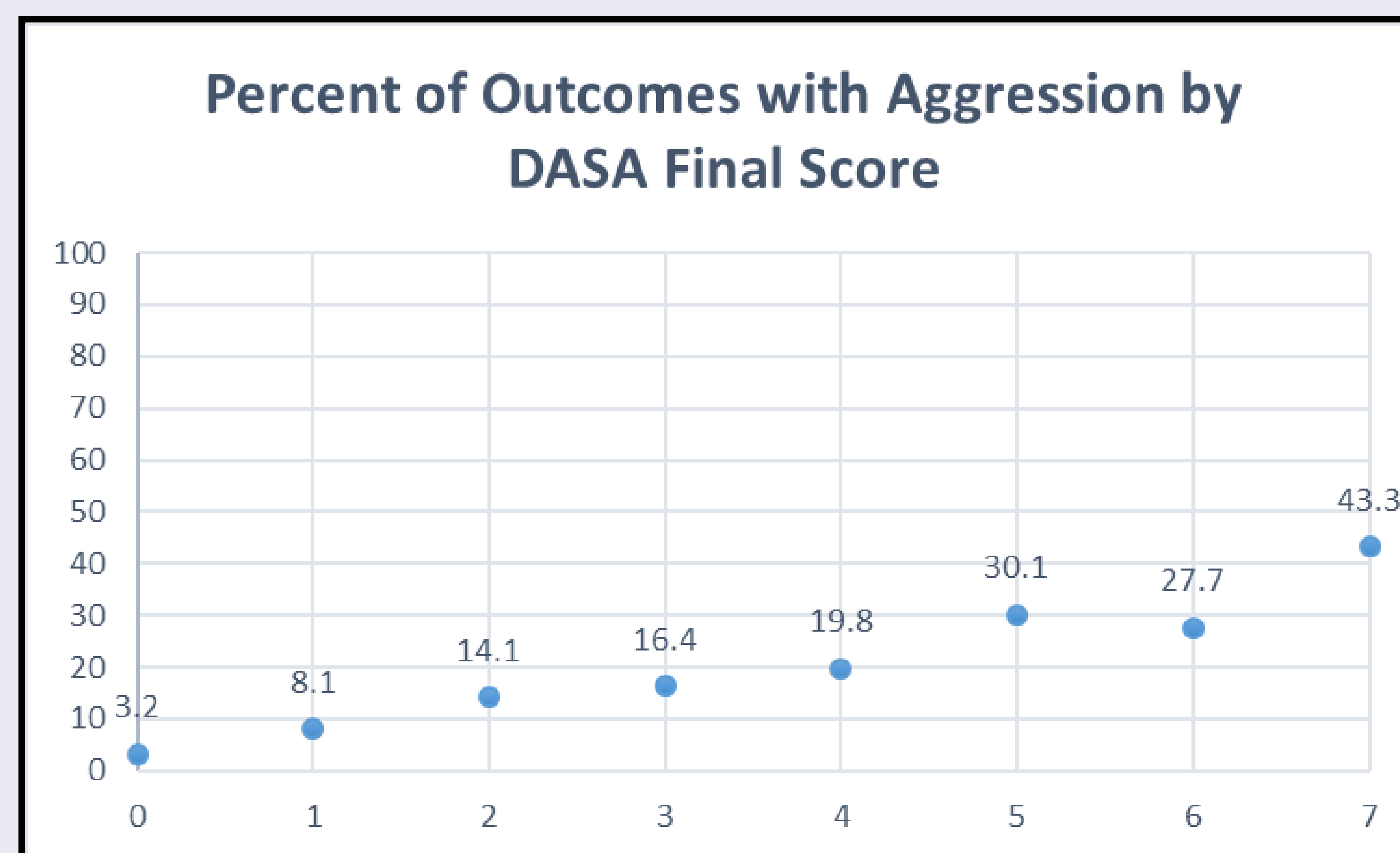
Patients' medical records included in this study were those of adults (1) over the age of 18; (2) who had at least one documented DASA final risk rating; and (3) who had either a chief complaint or discharge diagnosis that reflected they received psychiatric care.

Medical records were reviewed to determine if participants had exhibited violent or aggressive behavior subsequent to the documentation of the DASA score. Violent or aggressive behavior was defined as either 1) the administration of a pre-specified intramuscular medication (haloperidol, lorazepam, diphenhydramine, olanzapine, chlorpromazine) or 2) the placement of hard leather physical restraints on the patient in the medical record.

Spearman rank-correlation coefficient were used to determine if DASA scores were related to the outcome of violence or aggression. A receiver operating characteristic (ROC) curve was used to summarize the overall predictive accuracy of the tool. The area under the curve (AUC) was determined to report the diagnostic accuracy of the DASA tool.

## RESULTS

3, 433 DASA Final Risk Scores were included in the analysis.



ROC curve using aggressions restricted to > 30 minutes post DASA score, AUC = 0.744, CI (0.711, 0.778)

## DISCUSSION

The DASA has predictive validity for use in evaluating behavioral health patients in an ED setting in a medical center located in a major metropolitan area. The tool is capable of predicting violence or aggression within a time frame conducive to the implementation of non-invasive measures. The results of this study would support a cut-off score of  $\geq 2$  for required implementation of a non-invasive intervention to reduce the incidence of violence. The tool was employed as an assessment standard with documentation compliance >85%.

## IMPLICATIONS FOR PRACTICE

- The findings of this study will be helpful for emergency nurses seeking to enhance the assessment of potential violence or aggression in behavioral health patients that are cared for in the ED.
- Implementation of a violent risk assessment tool that has established validity for use in the ED setting will be helpful in establishing a path forward to provide early identification of patients that may become violent or aggressive in order to protect staff and others from harm.
- Efforts to reduce the use of physical restraints with associated risks for patients and increased resource use for ED staff will be supported by a validated violence risk assessment tool.