

CLINICAL PRACTICE

Capturing acute stress disorder in the trauma population

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ABSTRACT

Acute Stress Disorder (ASD) is classified as a psychiatric diagnosis that was first introduced to the DSM-IV in 1994. It was introduced to describe acute stress reactions that precede Post-Traumatic Stress Disorder (PTSD). ASD usually occurs within the first month after the occurrence of a traumatic event. Early recognition of ASD is crucial from both an early treatment standpoint and avoidance of progressing to PTSD, especially in the trauma population, as late recognition can lead to long-term mental and physical suffering. At this time, there is no protocol for screening of ASD upon admission to a Level I trauma center in the Southeast in the United States. Hence, not all trauma patients are assessed for ASD. Often, acute stress is recognized several days after admission, with late referrals to the psychiatric team for psychological evaluation and treatment. This late psychiatric referral often leads to the patient's inability to participate in physical rehabilitation due to stress and anxiety, thus increasing hospital stay and use of resources. Thus, collaborating between the primary medical team and psychiatry team is essential and facilitates the recovery process for potential acute or long-term psychiatric disorders. To determine if ASD was recognized in the trauma population at a large Level I Trauma Center in the Southeast, and if referrals to psychiatry were initiated in a timely manner, this quality improvement study was developed. The data from this study served to correlate the percentage of patients who screened positive for ASD on admission to a sub-acute trauma floor. A standardized tool called The Stanford Acute Stress Reaction Questionnaire (SASRQ) was used to determine the frequency of ASD in this trauma population. We also ascertained if the trauma nurse practitioners (NPs) had requested a psychiatric referral without the use of the SASRQ tool. Findings included 18 of the 50 trauma patients who had screened positive for ASD (36%). It was found that of those 18 patients who screened positive for ASD, 2 patients received a psychiatric consultation for evaluation and treatment. These findings suggest a needed focus of capturing ASD early in the admission process, using a validated screening tool, along with early psychological intervention to aid in prevention of PTSD post-discharge.

Key Words: Trauma, Stress, Relationship, Prevalence, Prevention

1. INTRODUCTION

It has long been recognized that a traumatic event can be a precursor to developing acute stress. As far back as 1994, the DSM-IV classified acute stress disorder (ASD) as an acute stress reaction that occurs in the initial month following a traumatic event, and that is often the precursor to post-traumatic stress disorder (PTSD). It looked at both those

patients who experienced a traumatic event early in the post trauma period and who may be at risk of developing PTSD within a month following. Changes from the DSM-IV to the updated DSM-V, classified the ASD criterion as a traumatic event being experienced directly or indirectly, or being witnessed. ASD was introduced to describe acute stress reactions that precede PTSD.^[1] ASD occurs within the first

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month after the occurrence of a traumatic event. Initial symptoms manifested include dissociative symptoms such as derealization, depersonalization, and avoidance symptoms. A clinical diagnosis of ASD can be made if the person has three or more dissociative symptoms. Additional symptoms include feelings of numbness, detachment, reduced awareness of surroundings, or depersonalization. Secondary symptoms that often concur with primary symptoms are anger, anxiety, insomnia, night terrors, and a sense of helplessness. PTSD occurs one month following a traumatic event, versus ASD, which occurs within the first month. Approximately 33% of the trauma population will develop ASD following a traumatic event.^[2] A recognized traumatic event can range from a motor vehicle collision, to traumatic brain injuries, burns, and falls, to be the victim of a violent crime. The Diagnostic and Statistical Manual of Mental Disorders (DSM-V) further associates traumatic events with any type of exposure to a threat, an event that involved actual or threatened death, serious injuries, or a physical threat to self or others.^[3] Early recognition of ASD in the trauma population is crucial in order to initiate early treatment with a psychiatric referral and to prevent the progression of PTSD, which can lead to long term mental and physical suffering post-hospitalization.^[4] PTSD occurs in approximately 10%-30% of people who are exposed to a traumatic event and approximately 50% of those individuals initially were diagnosed with ASD.^[5,6] Both ASD and PTSD require early recognition and psychological intervention to prevent life-long co-morbidities.^[2]

Many trauma patients who experience ASD, and who fail to receive treatment, will experience a great deal of emotional suffering after a traumatic event.^[6] Emotional suffering entails feelings of anger, numbness, avoidance, helplessness, nightmares, insomnia, and withdrawing from family and friends.^[5] People cope with stressful situations in different ways. Some people who experience acute stress recover quickly and are more resilient to stressful events. Others may be less resilient and began to experience multiple health problems, physically and mentally, and have difficulty concentrating on the healing process, including the physical recovery time from the traumatic injury. Often times, acute stress is recognized several days after admission with late referrals to the psychiatric team for psychological evaluation and treatment. This late psychiatric referral often leads to the patient's inability to participate in physical rehabilitation due to stress and anxiety, thus increasing length of hospital stay and utilization of resources.^[7] Currently, there is no protocol for screening of ASD upon admission to the Level 1 trauma center in the Southeast. According to the American College of Surgeons' Committee on Trauma (ACS/COT), there are currently no mandates for screening for ASD and PTSD post-

trauma admission to any Level I trauma centers in the United States. Lack of this mandate for screening and intervention demonstrates a need to improve clinical practice guidelines. They also state that implementing this intervention would require a wide array of resources to train personnel and integrate the screening process into the medical record, although the need to improve on current clinical practice exists.^[8]

2. BACKGROUND OF ASD

ASD is a complex psychiatric disorder. A clinical diagnosis of ASD can be made if the person has three or more dissociative symptoms. If dissociative symptoms persist longer than one-month post traumatic event, then a diagnosis of PTSD can be made.^[2] ASD can clinically cause a moderate amount of stress for the trauma patient, which leads to interference with physical, mental, and emotional functioning of everyday tasks.^[9] Furthermore, as already stated, the presence of ASD is associated with a high prevalence of subsequent PTSD. A subset of ASD symptoms (sense of numbness, restlessness, and depersonalization) have a strong association to prediction of PTSD.^[10]

It is critical to ascertain which trauma patients will suffer transient acute stress reactions versus those who are actively experiencing the acute stress symptoms that may lead to a long-term mental health disorder, such as PTSD. Identifying those trauma patients who are likely to develop long term psychopathology is crucial in order to implement early psychological intervention strategies.^[11]

3. SIGNIFICANCE OF PROJECT

Often times, patients are not given adequate attention to behavioral and psychological aspects associated with the recent traumatic event due to performing immediate life-saving measures after a traumatic injury has occurred. The healthcare team focuses on the immediate physical manifestations of the traumatic injury as a first priority, such as musculoskeletal, thoraco-abdominal, or neurological injuries. The patient is brought into the trauma bay, clothes are cut off immediately and their body is exposed for primary assessment of injuries. The healthcare team is moving quickly to ascertain injuries and perform life-saving procedures, while discussing the acute medical treatment in terms the patient may not understand, all the while causing a great deal of stress mentally and physically for the patient that has just endured physical trauma.^[12] This can be quite scary for patients, especially when family cannot be physically available for support during this time. Thus, supporting the need for early psychological intervention. According to the International Society for Traumatic Stress Studies (ISTSS) current treatment guidelines for ASD recommend early interventions

focusing on emotional support, as well as information on how a patient can access further resources for outpatient assistance. The guidelines also recommend that early intervention should be based off need of a psychiatric evaluation, such as through the use of a screening tool and meeting criteria for consultation.^[13] The ability to capture those trauma patients at risk for ASD in the acute phase of hospitalization can serve as a therapeutic window of opportunity, through which early interventions may both prevent the occurrence of PTSD, and help the patient establish a sense of control over the recovery process.^[11] The screening tool chosen for implementation for this project was the Stanford Acute Stress Reaction Questionnaire (SASRQ).

The SASRQ tool is a reliable and valid in assessing for ASD after a traumatic event. The SASRQ screening tool upholds a high internal consistency (Cronbach alpha = .90 and .91 for dissociative and anxiety symptoms) and concurrent validity with scores on the Impact of Event Scale ($r = .52-.69$).^[14] The SASRQ tool was developed in 1991 and consists of a 30-item self-report inventory that asks questions pertaining to ASD symptoms. The tool is divided into four subscales: 1) dissociative symptoms, 2) re-experiencing symptoms, 3) avoidance symptoms, and 4) mean marked anxiety/increased arousal symptoms. The questionnaire is presented in an easy to read format, and asks respondents to indicate frequencies of symptoms using a 6-point Likert scale from (0 = not experienced, to 5 = very often experienced). The tool is designed to be self-administered and the questions are at 7th-grade reading level.

4. PURPOSE/AIMS/OBJECTIVES OF PROJECT

Based on current research, this quality improvement project's goal was to begin the development of a new protocol using a screening tool to capture within the first 24-48 hours those trauma patients at risk for ASD, in order to identify those individuals who are at risk for ASD, and who would merit a psychiatric consult for future evaluation. With implementation of administering the SASRQ tool to a group of trauma patients, the aims of this quality improvement project were to: 1) determine the percentage of those patients who scored positive for ASD, 2) determine the percentage of those patients who scored negative for ASD, and 3) determine if any of the individuals who scored positive for ASD, without use of the SASRQ tool, had a psychiatric consult initiated by a trauma NP. To accomplish these aims, patients on a sub-acute trauma floor were screened for ASD using the SASRQ within 24-48 hours of admission. The 24-48-hour time frame was selected because of the short length of stay these patients typically have. In addition to determining whether a patient scored positively for ASD using the SASRQ tool, the patients were

followed during their entire hospitalization for identification of an independent psychiatric consult request.

5. PARTICIPANTS

Given use of the Glasgow Coma Score (GCS) of 13 or greater and a Rancho Los Amigos (RLA) score of 7 or greater, indicating the participants were cognitively intact, approval from the Institutional Review Board (IRB) was granted. The project was conducted over a two-week period of time, screening all trauma patients who were admitted to a sub-acute trauma unit, and who met the following criteria: 1) 16-90 years of age, who were able to understand English and read at a 7th-grade level, 2) who were non-ventilated, 3) Glasgow Coma Score (GCS) of 13 or greater, and 4) RLA score of 7 or greater. There were no restrictions on gender, racial or ethnic group, married or non-married, insured or non-insured. Excluded patients included individuals who had attempted suicide or who acknowledged suicidal ideation. Patients were invited to participate in the quality improvement project, regardless of the type of trauma injury they had sustained as long as they met the above criteria. Once patients were identified, verbal consent was obtained, and patients were given the SASRQ tool to complete. Patients were then followed until discharge to ascertain if the trauma NP's independently initiated a psychiatric consult for any patient in the project. A total of 50 patients were included in the project.

6. RESULTS OF PROJECT

As Table 1 indicates, 50 trauma patients were recruited and 68% were male and 32% were female. Breaking down the data further, 86% were Caucasian, 92% English was their primary language, and 42% had a history of mental illness such as depression, anxiety, bipolar, substance abuse, or a previous diagnosis of PTSD. The average age was 56 years old (see Table 1). In addition, 32% were motor vehicle collisions, with a top diagnosis of fracture of bone (90%) (see Table 2).

In terms of looking at individual responses to the four scales within the SASRQ, Table 3 illustrates that the mean score of dissociative symptoms present on the questionnaire for those who scored positive was 4.39 out of a possible of 10 points, mean re-experiencing symptoms was 3.4 out of a possible of 6 points, mean avoidance symptoms present was 3.83, and mean marked anxiety/increased arousal symptoms was 3.78, each out of a possible 6 points. By comparison, the mean score of dissociative symptoms for those who scored negative for ASD was 1.14 out of a possible 10 points, mean re-experiencing symptoms was 1.52, mean avoidance symptoms present was 0.63, and mean marked anxiety/increased

arousal symptoms was 0.59, each out of a possible 6 points (see Table 3).

Table 1. Demographics of population sample

Characteristics		Percentage
Age	16-36 years	44%
	37-57 years	40%
	58-78 years	10%
	79-90 years	4%
Gender	Male	68%
	Female	32%
	Caucasian	86%
Ethnicity	African American	4%
	Other	10%
Fluent in English	English	100%
	PTSD	2%
History of Mental Illness	Bipolar	4%
	Anxiety	20%
	Depression	18%
	Substance abuse	18%

Implementation of the SASRQ identified 18 out of 50 (36%) patients who screened positive for ASD within the first 24-48 hours of admission. Those 18 patients who screened positive for ASD, it was noted that only 2 patients sustained a psychiatric consultation by the trauma team, specifically by the trauma nurse practitioner (NP) for further evaluation

and treatment of acute stress. The outcome of the psychiatric consultations was initiation of a sleep aid for difficulty sleeping, along with outpatient resources for follow-up. Of the 32 patients who screened negative for ASD, 3 of these patients did receive a psychiatric consultation for a history of pre-existing mental health issues that required medication assistance.

Table 2. Variables of population sample

Items		Frequency of Occurrence
Diagnosis	Fracture of bone (s)	90%
	Pneumothorax	22%
	Hemothorax	6%
	Abdominal injury	18%
	Cardiac injury	6%
	Traumatic brain injury	20%
Mechanism of Injury	Laceration injury	28%
	MVA	32%
	MCC	18%
	Stabbing	4%
GCS	GSW	10%
	Fall	22%
	Assault	12%
RLA score	> or = 13	100%
	> or = 7	100%

*MVA = Motor Vehicle Accident; *MCC= Motor Cycle Collision; *GCS = Glasgow Coma Scale; *RLA= Rancho Los Amigos Scale

Table 3. Mean scores for positive ASD & negative ASD from SASRQ results

	Positive for ASD		Negative for ASD	
	Mean Score	Total possible score	Mean Score	Total possible score
Dissociative symptoms	4.39	10	1.14	10
Reexperiencing symptoms	3.4	6	1.52	6
Avoidance symptoms	3.83	6	0.63	6
Marked anxiety/increased arousal symptoms	3.78	6	0.59	6
Total mean	3.85	7	0.97	7

While this demonstrates that there is a workable collaborative effort between the trauma team and their need for obtaining a psychiatric consultation, this project supports the need to use a specific tool to identify those patients who are at risk for ASD. Following the International Society for Traumatic Stress Studies (ISTSS) guidelines, the first step is to identify those individuals who are at risk for ASD, followed by obtaining a psychiatric consultation to confirm the diagnosis. This study also indicated that all trauma patients do not need a psychiatric consultation, hence, 29 patients who scored negative on the SASRQ tool did not need a psychiatric consultation. Thus, by using a reliable tool, individuals who may benefit from a formal psychiatric consultation can be

identified. With this sample population, only 5 out of the 50 screened patients actually received a psychiatric consultation.

Implementation of this project in the sub-acute trauma population supports current ISTSS guidelines for early intervention through the use of a valid and reliable screening tool for ASD in the trauma population during the acute phase of admission. This project demonstrated that by using the SASRQ within the first 48 hours of admission, ASD can be appropriately identified and the psychiatric consultation process implemented. As this project demonstrated, only two patients of the 18 patients who scored positive for ASD (11%) who should have had a psychiatric consult for ASD received one prior to discharge. This indicates that the trauma team

recognized ASD symptoms in only 11% of the patients who could have required an immediate intervention. While these patients will continue to be seen in the Trauma Outpatient Clinic, unless these patients presented with overt signs and symptoms of ASD, 50% of these patients have the potential of developing PTSD. As indicated in Table 3, three additional psychiatric consults were made for assistance with psychiatric medication for individuals who had a negative SASRQ score. This supports an ongoing collaborative pathway between the trauma team, and specifically the trauma NP's and the department of psychiatry, and provides a closer linkage based on the needs of ASD patients. Thus, supporting the ISTSS guidelines for early treatment interventions along with receiving further resources for outpatient assistance to prevent the occurrence of PTSD.

7. DISCUSSION

The collection of data from this quality improvement project demonstrated that the SASRQ tool could be used early in the hospitalization to identify patients who are positive for ASD. Most importantly, initiation of the SASRQ tool identified an additional 16 patients (32%) that could have been eligible for a psychiatric consultation. The results demonstrated that the SASRQ tool documented potential ASD patients, while current protocols within the trauma unit failed to diagnose ASD in 18 of the 50 patients surveyed. These findings identify a gap in the current patient system that allows the trauma team, and more specifically the trauma NPs, to gather appropriate data related to the psychosocial needs of this trauma population. In addition, this data supports that not every patient needs a psychiatric consultation. Hence, setting up a system in where each patient is evaluated by a member from the psychiatric team would represent poor utilization of resources. However, since of total of 5 psychiatric consultations were requested on the 50 patients surveyed, it indicates

that a collaborative linkage exists between the trauma team and the psychiatric service. Furthermore, this supports the opportunity to establish a practice guideline in which all trauma patients are administered the SASRQ survey, and appropriate referrals made to confirm the diagnosis, and it provides the data needed for NP's to provide the necessary emotional support and guidance to facilitate the recovery process.

8. CONCLUSION

In conclusion, the ISTSS recommends a formal psychiatric consultation for all trauma patients in order to confirm a diagnosis of ASD and provides recommendations for ongoing inpatient treatment and outpatient follow-up. Nurse practitioners and bedside nurses can facilitate the recovery process by providing emotional support, and implementing and recommendations per the psychiatric consultation. Lastly, as previously stated, establishing a practice guideline for capturing ASD early on into the admission process, using the SASRQ tool, can offer early psychologic intervention with treatment. The SASRQ tool proved to be valid and reliable and captured 36% of the surveyed trauma patients as being at risk for ASD, which closely matches the predicted national average of 33%. Thus, screening for ASD in the trauma population supports current ISTSS guidelines for early psychological intervention after a traumatic event. While further research is needed to refine the psychiatric component of this screening process, and to document which interventions are most effective in treating ASD, this quality improvement project supported the need to use a reliable tool to capture those individuals most vulnerable to the development of ASD.

CONFLICTS OF INTEREST DISCLOSURE

The authors declare that there is no conflict of interest.

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