

# Knowledge, Attitude and Practices in Management of Trauma Victims: A Questionnaire Based Study

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## Abstract

**Background:** Trauma care represents a challenge to clinicians managing trauma patients. With standard trauma care protocols such as ATLS in place, it is important to acquire and adopt protocol based knowledge and implement it the routine management of trauma patients. It is clinician's responsibility to participate in such programs and update their knowledge and hence improve their practices. **Aims:** In this cross sectional study among clinicians we aim to evaluate their knowledge of trauma management protocols, practices based on such knowledge in the management of trauma patients and attitude towards acquiring this knowledge by attending standard trauma teaching programs. **Methods:** This study was conducted by distributing questionnaires among 83 doctors across various hospitals. Those respondents who had scored  $\geq 10$  were considered to have adequate knowledge of management of trauma patients and were used in analyzing correct response rate. The results were analyzed statistically by applying the Fischer-exact test or Chi-square test. **Results:** The overall correct response rate for the study was 25%. The statistical correlation (p-value) for the correct response rate among clinicians with clinical experience of more or less than 5 yrs; whether routinely managing trauma patients or not and whether or not working in a trauma centre were 0.53, 1.00, 0.29 respectively. The p value for correlation of correct response rate among clinicians who had attended structured trauma course and those who had not was 0.00. **Conclusion:** The exposure to standard trauma teaching programs improves the knowledge and hence knowledge based practices of clinicians for trauma victims' management.

**Key words:** Trauma management, Trauma course.

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capacity as initial care provider especially in peripheral set ups. Trauma care represents a major challenge to the clinician, no matter what his or her specialty is. Trauma Care is rapidly advancing subject therefore it must be the responsibility of those treating the trauma patient to keep up to date with their knowledge and the latest recommendations. For that, academic exposure of trauma management protocols and their reinforcements may be required. Therefore, in this cross sectional study among clinicians we aim to evaluate their knowledge of trauma management protocols, practices based on such knowledge in the management of trauma patients and attitude towards acquiring this knowledge by attending standard trauma teaching programs.

## Materials and Methods

After ethics committee approval this study was conducted by distributing questionnaires among 83 doctors across various hospitals. Questionnaire included 23 questions. Eight were general questions and fifteen were content based questions based on standard trauma teaching program. The general questions assessed the clinical experience, exposure to trauma patients in the institution or whether participant worked in a dedicated trauma centre. Respondents also answered if they were aware of any trauma teaching program or had attended a standard trauma teaching course. The content based questions evaluated knowledge of trauma protocols and knowledge based practices of the respondents. Each content-based question had four options but one correct response and answers were evaluated on a scale of 1 to 15. The scores were not granted for the general questions. Those respondents who had scored  $\geq 10$  were considered to have adequate knowledge of management of trauma patients. The doctors who had refused to participate or those who had submitted incompletely filled questionnaires were not included in the study. The results were tabulated and analyzed statistically. The association

## Introduction

Injury is an increasingly significant health problem throughout the world. Prompt and effective treatment is the key to management of trauma patients to reduce mortality and ensuing morbidity. While it is expected of tertiary care set ups to have trauma management protocols in place, it may not be the case in many hospitals. Also, clinicians are very likely to encounter trauma victims in their individual

between various variables was calculated by applying the Fischer's exact test and Chi-square test. A result with p-value of < 0.05 was taken to be statistically significant.

**Results**

Out of 83 questionnaires distributed three incompletely filled questionnaires were excluded. The mean clinical experience of our respondents was 4.7 years. The overall correct response rate of our study was 25%. Out of the 80 respondents 23 had clinical experience of > 5 years. Among them five participants answered ≥10 questions correctly, while out of 57 respondents with ≤5 yrs of clinical experience nine answered questions correctly. The statistical correlation was insignificant. (p=0.53).

Among sixty eight respondents who managed trauma patients routinely in their practice, twelve answered ≥10 questions correctly as compared to two out of twelve respondents who did not (p-1.00).

Eight out of fourteen respondents who had correct response rate of ≥10 had a trauma teaching program conducted in their institution within past two years. (p- 0.63)

**Table 1: Scores In Relation To Various Factors.**

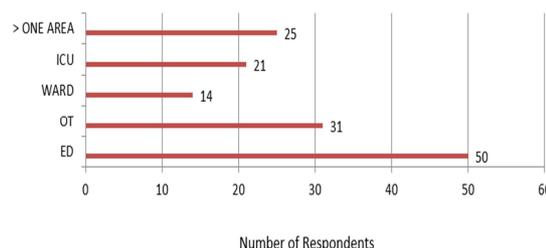
		SCORE <10	SCORE ≥10	P-VALUE
Clinical Experience Of Respondents	≤5 years	48	9	0.53
	>5 years	18	5	
Routinely Managing Trauma Patients	NO (n=12)	10	2	1.00
	YES(n=68)	56	12	
Working In Trauma Center	NO (n=15)	11	4	0.29
	YES (n=65)	55	10	
Aware About Trauma Teaching Program	NO (n=13)	12	1	Not evaluated
	YES (n=67)	54	13	
Attended Atls Course	NO (n=66)	60	6	0.00
	YES (n=14)	6	8	

(n is the number of respondents)

Sixty five respondents were working in institution with dedicated trauma centre and ten out of them answered questions correctly. While four out of fifteen respondents who did not work in trauma centre answered questions correctly. (p- 0.29)

Sixty seven (84%) respondents were aware of a trauma teaching program. Only fourteen (25%) respondents had attended the structure trauma course like ATLS and among them eight respondents had answered ≥10 questions correctly. While six out of sixty six respondents who had not attended the ATLS course answered ≥10 questions correctly. (p-0.00) [Table 1]

62% of respondents managed trauma patients in emergency department. While 31% respondents handled trauma patients in more than one area. [Figure 1]



**Figure 1: Area of Management of Trauma Patients**

**Discussion**

A protocol based approach in management of victims of trauma has resulted in improved patient outcomes in terms of mortality, length of ICU stay, GCS scores.<sup>[1,2]</sup> While many protocols are in place for management of trauma victims, ATLS protocol is a concise and comprehensive document covering principles for patient assessment and management on the whole.<sup>[3]</sup> It is a standard and internationally accepted protocol. So, we have chosen our questionnaire based on the tenets of ATLS teaching program to assess the knowledge and hence the knowledge based practices among the clinicians.

Majority of our respondents were managing trauma patients in routine clinical practice. The correct response rate among them was 17%, similar to response rate among those who were not routinely managing trauma patients (20%, p value- 1.00). We also observed that the difference in the scores was statistically insignificant between the respondents with >5 years experience and those with less experience. So, it can be said that mere clinical experience and exposure to trauma victims as patients in routine practice does not ensure adequate knowledge and hence correct practices in trauma management. According to a systematic review by Choudhary et al evaluating the relationship between clinical experience and performance,<sup>[4]</sup> physicians who have been in practice for more years and older physicians possess less factual knowledge, are less likely to adhere to appropriate standards of care. Though this is not quite the case in our study (correct response rate of 22% among those with experience >5 years vs 16% among those with less experience), it can somewhat explain the statistically insignificant difference of the scores among the two groups.

A study by Ellen J et al has shown that risk of death is significantly lower when care is provided in a trauma center than in a non-trauma center.<sup>[5]</sup> Dean et al have found that traumatic deaths with occult presentations were more in patients transported to non-trauma hospitals.<sup>[6]</sup> So we planned to evaluate if the doctors working in dedicated trauma centers had better knowledge of trauma management protocols

and if it could be the contributing factor for this disparity. We observed that those respondents who were working in institutions with dedicated trauma centers had similar knowledge of trauma management protocols as compared to those who were working in non-trauma institutions. The difference in patient outcomes can be explained by the findings of Rhee SO that the organization of the setting in which care is provided has substantial influence in the patient care.<sup>[7]</sup> But the influence of correct protocol based knowledge can not be undermined as, a study by van Olden et al has shown that introduction of the ATLS program significantly improved trauma patient outcome in the first hour after admission.<sup>[8]</sup> Similarly, the survival after inhospital cardiopulmonary arrest is significantly increased if doctors are trained in ACLS.<sup>[9]</sup>

Since our study recruited doctors as the response unit we assessed their attitude towards acquiring knowledge about trauma management protocols. While 84% of our respondents were aware of a trauma teaching program, only 25 % had attended a standard trauma teaching program. The initiative on the part of the doctor as evidenced by attending the standard trauma teaching program proved to improve their score. The result was statistically significant. ( $p= 0.00$ ). The results of our study corroborate with the findings of a similar study on ACLS by Filho et al<sup>10</sup> that theoretical knowledge on CPR was higher among physicians who had attended the ACLS course.

Management in emergency department is critical for better trauma patient outcome as reflected by the concept of Golden hour.<sup>3</sup> 62% of our respondents were handling trauma patients in emergency department, which is usually a first point of contact with medical services. But out of fifty such respondents, only eleven had correct response rate  $\geq 10$ . This also means that lack of knowledge of correct protocols among doctors could have been adversely affecting the trauma patients outcome. Twenty five respondents were managing trauma patients at more than one point of contact which can be expected to affect their long term outcome too.

So though our study evaluated the knowledge and practices of clinicians, our results may be extrapolated to patient outcome as well. The strength of our study has been that we have used ATLS based questionnaire including questions based on primary as well as secondary survey, questions about clinical management as well as about special groups such as children.

## **Conclusion**

From the results of our study it can be said that that the exposure to standard trauma teaching programs improves the knowledge and hence knowledge based practices of clinicians for trauma victims

management. It is on the part of clinician himself to acquire this knowledge by actively participating in teaching programs so that improvement in knowledge and practices in trauma management can be achieved.

## **Ethics Approval and Consent to participate**

This study was approved by IRB and consent was taken from all the participants.

## **Authors' Contribution**

NY and SG participated in the design of the study and performed the statistical analysis. NY and PK conceived of the study. NY and AG participated in its design and coordination and helped to draft the manuscript. All authors read and approved the final manuscript.

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## **References**

1. English SW, Turgeon AF, Owen E, Doucette S, Pagliarello G, McIntyre L. Protocol management of severe traumatic brain injury in intensive care units: a systematic review. *Neurocrit Care.* 2013;18(1):131-42.
2. Fakhry, Samir M. MD; Trask, Arthur L. MD; Waller, Maureen A. MSN, RN; Watts, Dorraine D. Management of Brain-Injured Patients by an Evidence-Based Medicine Protocol Improves Outcomes and Decreases Hospital Charges. *Journal of Trauma-Injury Infection & Critical Care:* 2004 ;56(3):492-500.
3. Advanced trauma life support student course. 9th edition. 2012
4. Choudhary NK, Fletcher RH, Soumerai SB. Systematic Review: The Relationship between Clinical Experience and Quality of Health Care. *Ann Intern Med.* 2005;142:260-273.
5. MacKenzie EJ, Rivara FP, Jurkovich GJ, Nathens AB, Frey KP, Egleston BL, Salkever DS, Scharfstein DO. *N Engl J Med* 2006; 354:366-378.
6. Dean D, Wetzel B, White N, Kupperman N, Wang NE, Haukoos JS et al. From 9-1-1 call to death: Evaluating traumatic deaths in seven regions for early recognition of high-risk patients. *Journal of trauma and acute care surgery.* 2014;76(3):846-53.
7. Rhee SO. Factors determining the quality of physician performance in patient care. *Med Care.* 1976;14(9):733-50.
8. Van Olden GDJ, Meeuwis JD, Bolhuis HW, Boxma Han, Goris RJA. Clinical impact of advanced trauma life support. *American journal of emergency medicine.* 2004;22(7):522-5.
9. Lowenstein SR, Sabyan EM, Lassen CF, Kern DC. Benefits of training physicians in advanced cardiac life support. *Chest.* 1986;89(4):512-6.
10. Filho NMF, Bandeira AC, Delmondes T, Oliveira A, Junior ASL, Cruz V et al. Assessment of the general knowledge of emergency physicians from hospitals of the city of Salvador (Brazil) on the care of cardiac arrest patients. *Arq. Bras. Cardiol.* 2006;87(5):23-7.

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