THE LEVEL OF KNOWLEDGE OF UNDERGRADUATE MEDICAL STUDENTS ON INITIAL ASSESSMENT OF TRAUMA PATIENTS AT THE FACULTY OF MEDICINE UDAYANA UNIVERSITY

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ABSTRACT

Initial assessment represented a critical component in trauma management, aiming to reduce mortality and morbidity, particularly from respiratory failure and central nervous system injuries. Trauma remained a significant global health concern, with mortality rates surpassing those of chronic diseases. Its incidence increased globally, including in Indonesia. Medical students were expected to acquire competency in trauma assessment. This study evaluated the knowledge of undergraduate medical students at Udayana University regarding initial trauma assessment as foundational clinical preparation. This study aims to assess the knowledge level of medical students in the Bachelor of Medicine Program regarding initial trauma assessment at the Faculty of Medicine, Udayana University. This study uses a descriptive quantitative method with a cross-sectional approach. The data is primary data collected through a questionnaire distributed to 95 students in the Bachelor of Medicine Program at the Faculty of Medicine, Udayana University. The study found that the majority of students had a low level of knowledge about initial assessment (60%), while 17.9% had moderate knowledge and 22.1% had good knowledge. Most respondents had never participated in BLS (76.8%) and ALS (90.5%) training. Students who participated in BLS and ALS training demonstrated better knowledge compared to those who did not participate in the training. The level of knowledge of students regarding initial assessment in trauma patients in the Bachelor of Medicine Program at the Faculty of Medicine, Udayana University, is still insufficient. Participation in trauma training significantly affects students' knowledge level.

Keywords : initial assessment, trauma, basic life support, ABCDE, knowledge level

INTRODUCTION

Initial assessment was a crucial step in emergency situations. The assessment conducted during emergencies helped plan appropriate responses or further actions in the management of patients with trauma or life-threatening injuries. In practice, the initial assessment was performed rapidly, systematically, and structurally, while still considering clinical judgment.[1] The purpose of initial assessment was to prevent early mortality and morbidity resulting from trauma, such as respiratory failure, impaired oxygenation to vital organs, or central nervous system injuries.Trauma was defined as sudden tissue damage caused by various mechanisms and was classified into three types based on its cause: mechanical, physical, and chemical trauma.[2] Trauma remained a global health issue with high mortality rates and contributed significantly to the global burden of disease, not only harming individuals but also affecting a nation's development.[3,4] Globally, trauma-related mortality remained higher than that caused by chronic illnesses such as HIV/AIDS, pulmonary tuberculosis, and malaria.[5] Of the 55 million deaths that occurred in 2013, 4.8 million (8.7%) were due to trauma, representing a 10.4% increase compared to 1990. It was estimated that 1.5 million people died from road traffic accidents in 2013, an increase of 15% since 1990 based on year life lost (YLL).[6]

Nationally, based on data from the 2018 Basic Health Research (Riskesdas), there were 1,017,290 (9.2%) injury cases, with the highest prevalence in West Papua (12.6%) and the lowest in Jambi (5.6%). This indicated a trend of increasing injury prevalence from 8.2% in 2013 to 9.2% in 2018. Thirteen provinces in Indonesia had a higher injury prevalence than the national average. According to Riskesdas 2018, Bali Province ranked 14th nationally with an injury prevalence of 8.8%, with Jembrana Regency having the highest rate (12.87%) and Badung Regency the lowest (4.8%).[7] Injuries disrupted daily life and decreased the quality of life. Unlike chronic diseases, trauma could be prevented or minimized through adequate resources and the implementation of injury prevention strategies. Proper initial assessment of patients could help improve their quality of life.[8,9]

Medical students were individuals enrolled in a medical program at a university to pursue a medical degree. In public perception, doctors were seen as life-savers, but more than that, they also

helped minimize pain and heal illness. Doctors were expected to work quickly and accurately to prevent patients from experiencing disability or death due to trauma. Therefore, medical students, as future doctors, needed to equip themselves with both theoretical knowledge and practical medical skills, especially those related to emergency cases.[10, 11] Initial assessment in trauma patients thus played a key role in determining the success of trauma management both in and outside hospital settings.[10, 12, 13]

Based on the explanation above, the authors were interested in conducting a study titled "The Knowledge Level of Undergraduate Medical Students on Initial Assessment of Trauma Patients at the Faculty of Medicine, Udayana University." This research served as an important foundation for medical students to prepare for their future roles as physicians. The aim of this study was to assess the knowledge level of undergraduate medical students regarding the initial assessment of trauma patients at the Faculty of Medicine, Udayana University

OBJECT AND METHOD

This study employed a quantitative descriptive design with a cross-sectional approach. Data collection used primary data obtained through the distribution of questionnaires adapted from the 10th edition of the ATLS pretest (2018). The questionnaire consisted of forty multiple-choice questions with five answer options, designed to measure the level of knowledge of undergraduate medical students regarding initial assessment in trauma patients at the Faculty of Medicine, Udayana University, in the year 2025.

The sampling method used in this study was simple random sampling, and a total of 95 respondents were obtained. The sample was drawn from sixth-semester undergraduate medical students at Udayana University who had completed the questionnaire, met the inclusion criteria, and represented the overall population.

The inclusion criteria in this study were sixth-semester students who were actively enrolled in the undergraduate medical program at Udayana University in 2025 and had given informed consent to participate as research respondents.The exclusion criteria were students who had previously attended trauma training (Basic Life Support/Advanced Life Support) more than one year prior

without regular training renewal, and sixth-semester students of the undergraduate medical program at Udayana University who did not complete the questionnaire in full.

The independent variables in this study were basic life support (BLS) training and advanced life support (ALS) training. The dependent variable was the knowledge level of undergraduate medical students at Udayana University regarding the initial assessment of trauma patients.

The collected data included gender, history of participation in BLS and ALS training, and the respondents' knowledge level regarding the initial assessment of trauma patients. The data were analyzed using Microsoft Excel and presented in tabular form to provide a comprehensive overview of the information collected.This study was approved by the Ethics Committee of the Faculty of Medicine, Udayana University, with the number 0939/UN14.2.2.VII.14/LT/2025.

RESULT

A study This study was conducted in April 2025 among sixth-semester students in the Undergraduate Medical Program, Faculty of Medicine, Udayana University. The research employed a quantitative descriptive method, utilizing primary data obtained through a questionnaire. Simple random sampling was used for sample selection, and the data were processed using Microsoft Excel.

A total of 95 students participated in this study after meeting the inclusion and exclusion criteria. The collected data included gender, participation in basic life support (BLS) training, advanced life support (ALS) training, other trauma-related training, and the respondents' knowledge level regarding the initial assessment of trauma patients. The data were analyzed and presented in tabular form to provide a comprehensive overview of the information collected.

Characteristics of the Respondents in This Study

The characteristics of the respondents in this study were sixth-semester students from the Undergraduate Medical Program, Faculty of Medicine, Udayana University, with a total of 95 respondents. The characteristics further examined included the history of participation in basic life support (BLS) training and advanced life support (ALS) training.

Based on **Table 1**, it was found that the majority of the respondents were female, with 56 respondents (58.9%), while 39 respondents (41.1%) were male.

Table 1. Characteristics of the respondents

Characteristic (n=95)	Frequency(n)	Percentage(%)
Gender		
Male	39	41,1
Female	56	58,9
History of BLS Training		
Yes	22	23,2
No	73	76,8
History of ALS Training		
Yes	9	9,5
No	86	90,5
History of both BLS and ALS		
Yes	9	9,5
No	86	90,5

Based on the history of BLS training, most respondents had never attended the training, with 73 respondents (76.8%), while 22 respondents (23.2%) had previously participated in BLS training. Regarding the history of ALS training, 9 respondents (9.5%) had attended both BLS and ALS training, while 86 respondents (90.5%) had never participated in ALS training.

Table 2. Distribution of knowledge level based on all respondents

Knowledge Level	Frequency(n)	Percentage(%)
Good (>80%)	21	22,1
Fair (60-79%)	17	17,9
Poor (<60%)	57	60
Total	95	100

Table 2 showed the distribution of knowledge levels among all respondents. Of the 95 respondents involved in this study, the majority had a low knowledge level, with 57 respondents (60%). 21 respondents (22.1%) had a good knowledge level with scores above 80%, while 17 respondents (17.9%) had a fair knowledge level with scores ranging from 60% to 79%.

Distribution of Students' Knowledge Level Based on Participation in Trauma Training

Table 3 depicted the distribution of respondents' knowledge levels based on their history of participation in trauma
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This indicated that the majority of respondents lacked experience in emergency-related training, including both BLS and ALS, which could influence their knowledge level of the initial assessment in trauma patients.

Distribution of Knowledge Level Based on All Respondents training, including both BLS (Basic Life Support) and ALS (Advanced Life Support) training. Based on the history of BLS training, respondents who had attended the training showed better knowledge levels, with 36.4% having good knowledge, 40.9% having fair knowledge, and 22.7% showing poor knowledge. Meanwhile, among respondents who had not attended BLS training, only 17.8% had good knowledge, 11% had fair knowledge, and the majority, 71.2%, had poor knowledge regarding the initial assessment of trauma patient

Table 3. Distribution of student knowledge levels based on participation in trauma training

Participation in Trauma Training (n=95)		Knowledge Level		
		Good f (%)	Fair f (%)	Poor f (%)
BLS	Yes	8 (36,4)	9 (40,9)	5 (22,7)
	No	13 (17,8)	8 (11)	52 (71,2)
ALS	Yes	5 (55,6)	3 (33,3)	1 (11,1)
	No	16 (18,6)	14 (16,3)	56 (65,1)
BLS and ALS	Yes	5 (55,6)	3 (33,3)	1 (11,1)
	No	16 (18,6)	14 (16,3)	56 (65,1)

For the respondents who participated in the ALS training, and who also had a history of participating in the BLS training, the distribution of knowledge levels was higher compared to those who did not participate in the training. Specifically, 55.6% of the respondents had good knowledge, 33.3% had sufficient knowledge, and 11.1% had poor knowledge. In contrast, for the respondents who did not participate in the ALS training, only 18.6% showed good knowledge, 16.3% had sufficient knowledge, and 65.1% had poor knowledge.

DISCUSSION

This study aimed to assess the knowledge level of undergraduate medical students in the initial assessment of trauma patients at the Faculty of Medicine, Udayana University by completing the provided questionnaire. Based on the obtained data, several points were observed regarding the distribution of student knowledge levels and the impact of participation in trauma training such as BLS and ALS.

A total of 95 respondents participated in the study, with 41% being male and 58.9% being female. The majority of

respondents demonstrated poor knowledge, with 60% of them scoring below 60%. This indicated that most students had not fully mastered the knowledge required for performing an initial assessment of trauma patients. Meanwhile, 22.1% of respondents showed good knowledge with scores above 80%, and 17.9% had sufficient knowledge with scores ranging from 60-79%. A similar study conducted at the Emergency Department of Pringsewu Hospital showed that nurses' knowledge of the initial assessment in emergency cases was still lacking.[14] Another similar study among medical students at Dilla University in Ethiopia indicated that the lack of knowledge regarding initial assessment was due to the majority of students never having participated in BLS training.[15]

The low level of knowledge among students regarding the initial assessment of trauma patients could be attributed to several factors. One factor was the lack of theory and clinical skills, as well as the absence of participation in trauma training such as Basic Life Support (BLS) and Advanced Life Support (ALS). Other contributing factors to the low scores obtained by the respondents included limited time in completing the

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questionnaire and a less conducive environment. These factors may have contributed to the lower level of student knowledge related to initial assessment in trauma patients.[16]

Based on the history or participation in trauma training, it was found that respondents who had participated in both BLS and ALS training tended to have better knowledge. A similar finding was reported by Nirmalasari and Winarti (2020), which showed that trauma training influenced knowledge and skills in initial assessment. In the group that participated in BLS training, 36.4% of respondents had good knowledge, 40.9% had sufficient knowledge, and 22.7% showed poor knowledge. In contrast, for respondents who did not participate in BLS training, only 17.8% had good knowledge, 11% had sufficient knowledge, while the majority of respondents (71.2%) had poor knowledge in the initial assessment of trauma patients. A similar result was found in the ALS training group, where respondents who participated in ALS training and also had participated in BLS training had 55.6% good knowledge, 33.3% sufficient knowledge, and 11.1% poor knowledge. On the other hand, in the group that did not participate in ALS training, 65.1% of respondents had poor knowledge, 16.3% had sufficient knowledge, and only 18.6% had good knowledge. This indicated that trauma training had an effect on the knowledge level of students regarding initial assessment in trauma patients.[17, 18, 19]

Overall, the results of this study showed that participation in emergency training (BLS and ALS) had a positive impact on the students' knowledge level regarding the initial assessment of trauma patients. Students who participated in BLS and ALS training demonstrated better knowledge compared to those who did not participate in the training. However, despite the positive impact, some students still exhibited poor knowledge, particularly those with a history of participating in BLS training. This indicates that emergency training needs to be enhanced to optimize students' understanding and skills in handling trauma or emergency cases. Through such training, students will become more competent in performing the initial assessment of trauma patients and can apply the theories they have learned. Therefore, it is important to provide trauma training (BLS/ALS) for undergraduate medical students before they proceed to the professional program.[16, 18, 20]

CONCLUSIONS AND SUGGESTIONS

This study assessed the knowledge of undergraduate medical students at the Faculty of Medicine, Udayana University, regarding initial trauma assessment. The results showed that the majority of respondents (60%) had poor knowledge, while 22.1% demonstrated good knowledge and 17.9% had adequate knowledge. A significant portion of students (76.8%) had never participated in Basic Life Support (BLS) training, and 90.5% had not undergone Advanced Life Support (ALS) training. Among those who had attended BLS training, 36.4% showed good knowledge, 40.9% had adequate knowledge, and 22.7% demonstrated poor knowledge. In contrast, only 17.8% of those who had not participated in BLS training exhibited good knowledge, while 71.2% had poor knowledge. For ALS training, students who had attended both BLS and ALS training showed significantly better knowledge, with 55.6% demonstrating good knowledge, 33.3% adequate knowledge, and 11.1% poor knowledge.

The findings indicate that participation in trauma training (BLS/ALS) positively influenced the students' knowledge of initial trauma assessment. Therefore, it is recommended that trauma training be prioritized for preclinical students before they progress to the professional phase, ensuring that they are adequately prepared. Further studies should expand the sample size and employ more comprehensive methodologies to provide a deeper understanding of students' knowledge regarding initial trauma assessment.

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