

# The Effectiveness of Educational Video Learning on Patient Safety Knowledge in Clinical Clerkship Student in Teaching Hospital

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## ABSTRAK

**Abstract:** Patient safety is the main point to consider and promote in every health service at various levels of health facilities. It is highly prominent for students, especially clinical clerkships, as future doctors. Currently, the use of educational video is a popular learning medium for students. Yet, no research reveals how clinical clerkships are exposed to patient safety after learning through videos before taking education at teaching hospitals. The current study aimed to describe the learning outcomes of patient safety education videos in clinical clerkships. It employed a descriptive-analytic method. Twenty-three clinical clerkships studied the videos about patient safety and filled out questions associated with patient safety. The average score of the learning outcomes of the patient safety videos was 84.64. The scores ranged from 60 to 100, and the median was 86.66. The answers with the lowest scores were questions about patient safety goals and the accuracy of patient identification. The aspects of knowledge about drug allergy, hand hygiene, reduction in inpatient fall, and identification of blood transfusions were answered correctly by all participants. The outcomes of the clinical clerkship learning are still varied. Further research is required to compare learning outcomes before and after studying educational videos with a broader domain.

**Abstrak:** Keselamatan pasien merupakan hal utama yang harus diperhatikan dan digalakkan dalam setiap pelayanan kesehatan di berbagai tingkat fasilitas kesehatan. Hal ini sangat menonjol bagi mahasiswa, terutama kepaniteraan klinis, sebagai calon dokter. Saat ini penggunaan video pendidikan merupakan media pembelajaran yang populer bagi siswa. Namun, tidak ada penelitian yang mengungkapkan bagaimana kepaniteraan klinis terpapar pada keselamatan pasien setelah belajar melalui video sebelum mengikuti pendidikan di rumah sakit pendidikan. Penelitian ini bertujuan untuk mendeskripsikan hasil pembelajaran video edukasi keselamatan pasien di kepaniteraan klinik. Penelitian ini menggunakan metode deskriptif-analitik. Dua puluh tiga kepaniteraan klinis mempelajari video tentang keselamatan pasien dan mengisi pertanyaan yang terkait dengan keselamatan pasien. Rata-rata skor hasil belajar video keselamatan pasien adalah 84,64. Skor berkisar dari 60 hingga 100, dan median adalah 86,66. Jawaban dengan skor terendah adalah pertanyaan tentang tujuan keselamatan pasien dan ketepatan identifikasi pasien. Aspek pengetahuan tentang alergi obat, kebersihan tangan, pengurangan pasien jatuh rawat inap, dan identifikasi transfusi darah dijawab dengan benar oleh seluruh partisipan. Hasil pembelajaran kepaniteraan klinik masih bervariasi. Diperlukan penelitian lebih lanjut untuk membandingkan hasil belajar sebelum dan sesudah mempelajari video pendidikan dengan domain yang lebih luas.

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In 1999, a report publication, titled "To Err is Human: Building a Safer Health System" by the United States Institute of Medicine (IOM), stated that approximately 44.000-98.000 cases were reported related to deaths from preventable medical errors, and they become the third leading cause of death in the United States (Kohn, Corrigan, & Donaldson, 2000; James, 2013). On the other hand, the lack of knowledge among medical students regarding patient safety shows the lack of efficiency of informal education. Therefore, knowledge about patient safety in clinical students' needs to be highly considered, and it requires better policies to improve patient safety (Nabilou et al., 2015). Integrated education about patient safety at all medical and health education levels is believed to prevent medical errors (Liao et al., 2014). The scope of educational programs is limited by several factors within

health institutions, such as professional diversity, professional performance, lecturer recruitment, classrooms, didactic materials, and the appropriate allocation of time and space for classes. Likewise, the other limiting factors are the program costs and the time required (Wanderlei & Montagna, 2018).

The development of patient safety education interventions delivered to residents and medical students increases rapidly. However, there found significant methodological shortcomings, and additional evidence of an impact on the learning outcomes is urgently needed. While there is an increase in the efforts to promote such interventions, adoption and outreach are the future challenges (Kirkman et al., 2015). Learners face contradictions when learning about patient safety, especially during the transitional phase of their training. This contradiction creates potential learning opportunities that should be used in patient safety education. Understanding the complexities of patient safety is critical for improving education in medicine (de Feijter et al., 2011). Attitudes towards patient safety are fundamental because of their profound impact on behavioral decisions in clinical settings. Thus, patient safety education should be designed to build the right attitude (Park et al., 2019).

There are several studies on patient safety education for clinical students in teaching hospitals for undergraduate students and other health workers. However, only a few previous studies are discussing the appropriate learning methods for clinical students about patient safety. Therefore, this study aimed to describe the learning outcomes of patient safety education videos for clinical clerkship students.

## METHOD

This research employed the descriptive analysis method. Twenty-three young doctors currently in the eye department rotation at a satellite teaching hospital, North Jakarta, were given a questionnaire regarding patient safety knowledge by using Google form. The video is five-minute and seven-second long. It consists of six patient safety goals.

**Table 1. Questionnaire about Young Doctor Perception and Satisfaction on Patient Safety Learning Video**

No.	Question	Scale
1	Patient safety objectives, patient safety goals	Multiple choice
2	Patient identification accuracy, blood transfusion identification	Multiple choice
3	Effective communication	Multiple choice
4	Definition of drug allergies, drug management to concern	Multiple choice
5	The accuracy of location, procedure, and patient of the operation	Multiple choice
6	Hand Hygiene, Knowledge about Nosocomial Infections	Multiple choice
7	Knowledge about patient falls	Multiple choice

## RESULTS

The research results from the twenty-three clinical clerkship students show the following:

**Table 2. Participant Characteristics**

Characteristics	Number
Sex	
Man	9 (39.12%)
Woman	14 (60.87%)
Age	
years old	14 (60.87%)
≥24 years	9 (39.12%)
The number of rotations taken	
≥4 old station/co-assistant	10 (43.47%)
<3 New station/co-assistant	13 (56.52%)

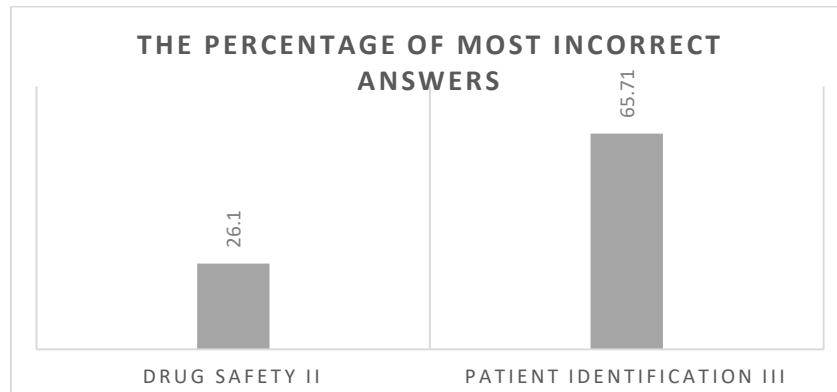
Table 2 shows that most female clinical clerkships are aged 21 to 23 years (60.87%), and most clinical clerkship students have undergone <3 new stations/ co-assistant (56.52%).

**Table 3. The Evaluation Results of Patient Safety Video Learning**

No.	Question	Correct	Wrong
1	The objective Patient safety	22 (95.7%)	1 (4.3%)
2	The target of patient safety	18 (78.3%)	5 (21.7%)
3	The objective of patient safety II	23 (100%)	0
4	Elective communication	19 (82.6%)	4 (17.39%)
5	Patient identification	21 (91.35%)	2 (8.7%)

No.	Question	Correct	Wrong
6	Patient identification II	23 (100%)	0
7	Patient identification III	8 (34.8%)	15 (65.21%)
8	Drug Safety	23 (100%)	0
9	Drug Safety II	17 (73.9%)	6 (26.1%)
10	Drug Safety III	18 (78.3%)	5 (21.7%)
11	Right procedure, right location, right patient operation	19 (82.6%)	4 (17.39%)
12	Hand Hygiene	22 (95.7%)	1 (4.3%)
13	Nosocomial Infection	22 (95.7%)	1 (4.3%)
14	Reduction of Patient Fall Risk	23 (100%)	0

The questions that all answered correctly were those regarding the objectives of patient safety II, patient identification II, drug safety, and reduction of patient fall risk.



**Figure 1. The Percentage of Most Incorrect Answers**

Most incorrect answers are associated with patient identification II (65.71%) and drug safety II (26.1%).

**Table 4. The Score between the Old and New Clinical Clerkship Students**

	Mean	Median	Min	Max	p value
<b>Sex</b>					
Male	85.56+1.68	86	80	93	0.00
Female	83.43+2.93	86	60	100	
<b>Age</b>					
21-23 Years Old	88.14+1.78	86	73	100	0.00
>24 Years Old	78.22+3.06	80	60	86	
<b>The duration of co-assistant</b>					
Old Clinical Clerkship Student	79 ± 2.84	80	60	86	0.01
New Clinical Clerkship Student	88.31 ± 6.93	86	73	100	

Table 4 concluded that each learning evaluation on clinical clerkship students was according to gender, age, and duration of co-assistant. The Statistic results showed significant differences in gender, age (p = 0.00), and duration of co-assignment p = 0.011 (<0.05). The clinical student learning scores were significantly different according to gender, age, and study period.

### DISCUSSION

The development of times and modern health services suggest the necessity to focus on quality and patient safety for health service providers, not to mention students as the prospective doctors. The current research describes patient safety learning with videos among clinical clerkship students. It is preliminary research on a more comprehensive future effort.

Teaching patient safety and quality improvement to medical students will be effective if integrated into clinical education rather than preclinical courses or independent computer modules. Students realize that this topic is prominent for their careers as future doctors regardless of the intended specialization (Teigland et al., 2013). They report that their level of knowledge is low, and they prefer real-life examples and problem-based learning/PBL approaches (Solomon & Gudayu, 2020). Attitudes towards patient safety are fundamental because of their profound impact on behavioral decisions in clinical settings. Thus, patient safety education should be designed to emphasize the appropriate attitudes (Park et al., 2019).

In this study, we examined the learning outcomes on patient safety through educational videos for clinical clerkship students during the era of online learning due to the Covid-19 pandemic. It resulted from that: the questions with all correct answers were about the purpose of patient safety, patient identification, drug safety, and reduction of patient fall risk. Each of the learning evaluation results among the new clinical clerkship students and those who have gone through a period of more than four rotations (old). The statistic results showed  $p = 0.011 (<0.05)$ . It concluded that the old and new clinical student learning scores were significantly different.

The use of high-quality videos containing complete information can improve the training process of students and health professionals and increase individual awareness of the importance of their participation in safety issues (Salvador et al., 2017). Research by Gross et al. (2019) states that the presentation of didactic structures causes differences in learning success among groups: traditional lectures and instructional videos featuring practical examples.

Educational videos are significant potential to improve patient safety. However, the efforts to put patient safety education videos in practice need to consider the demand and characteristics of different patient groups rather than adopting a one-size-fits-all approach (Pinto et al., 2013). A study by Kandler et al. (2016) provides empirical evidence on the effectiveness of educational videos to improve adherence to the standard protocols during complex medical procedures. Video learning and introduction can reduce failures in patient safety. They recommend introducing videos to improve protocol compliance.

## CONCLUSION

The learning outcomes of clinical clerkship students through videos related to patient safety still vary. They differ significantly according to age, gender, and length of rotation. This is a preliminary study that further research how learning outcomes before and after learning through educational videos with more participants in various teaching hospitals are highly needed.

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