Nurse Educator

Potential Impacts of AI-Generated Videos on Nursing Care

Mahmut Dağcı, PhD, RN; Ayşe Dost, PhD, RN; and Funda Çam, MSc, RN

ABSTRACT

Background: Artificial intelligence (AI)-generated videos represent a groundbreaking innovation in creating realistic and creative visual scenarios based on textual prompts. While their use in nursing education and patient care offers significant potential, it also raises various concerns.

Problem: Despite their transformative potential, AI-generated videos carry risks, including inaccuracies, ethical concerns, and biases. Misleading or scientifically unsupported content threatens patient safety, undermines professional nursing standards, and raises questions about the accountability of video creators.

Approach: This article evaluates the benefits and limitations of AI-generated video platforms in nursing care, including their ability to improve education and facilitate professional development. To explore these potentials, this article utilized Sora™ (OpenAI) to create example videos based on prompts designed from a nursing care perspective, highlighting both the opportunities and challenges.

Conclusions: AI-generated videos hold significant potential to enhance nursing education and patient care. However, challenges such as focus issues, procedural inaccuracies, object inconsistencies, and deviations from clinical standards and best practices must be addressed to prevent risks to patient safety. Collaboration between health care professionals and AI developers is essential to ensure their safe and effective integration into nursing practices.

Keywords: artificial video generation, generative artificial intelligence, large language models, nursing, video-assisted techniques and procedures

Cite this article as: Dağcı M, Dost A, Çam F. Potential impacts of AI-generated videos on nursing care. *Nurse Educ*. 2025;50(5):E254-E258 doi:10.1097/NNE.0000000000001880

Artificial intelligence (AI)-driven systems enable the synthesis of novel educational videos by identifying complex patterns and relationships within content domains. Generative AI (genAI) can integrate multimodal data, such as text, audio, and visuals, into the production process, adapting to diverse learning preferences.[1] Platforms such as Sora™ (OpenAI), Veo2 (Google Inc.), Runway (Runway Inc.), InVideo (InVideo.io), Pictory (Pictory AI), Synthesia (Synthesia.io), and DeepBrain (DeepBrain AI) have gained prominence as genAI-based video content creation tools.[2] These platforms simplify the creation of nursing care and patient education videos without requiring traditional video recording equipment, enhancing the accessibility of health care-related content online and globally.

GenAI, in creating health care-related videos, is already perceived as a transformative and accelerating force for traditional practices.[3] Moreover, in an increasingly globalized world, AI offers a significant advantage with its ability to produce videos in various dialects and languages, catering to diverse ethnicities.[4]

Nurses use videos to support educational processes in nursing care and education. Healthy/sick individuals generally use videos published on YouTube and similar social media platforms to learn about health promotion and disease-related treatment processes and treatment practices.[5] It is reported that videos are accepted to be more effective than traditional methods in understanding health care issues.[6] Videos prepared especially for pregnancy and puerperium, newborn and child care, chronic disease management (eg, blood pressure and blood sugar measurement, insulin and anticoagulant injections, inhaler use for respiratory disorders), wound care, perioperative care, and stoma care have significant potential in providing information.[7-10] However, the reliability and scientific basis of these videos are limited, leading to serious concerns.[5,11,12] The use of videos with such limitations in nursing can lead to various problems in professional education and patient care. The dissemination of videos lacking a scientific basis can cause patients to misunderstand nursing practices, compromise patient safety standards, and weaken nurses' professional knowledge and experience. If these questionable videos are generated with the assistance of AI platforms, ethical accountability concerns may also arise.[13]

Author Affiliations: Department of Nursing, Bezmialem Vakif University, Faculty of Health Sciences, Istanbul, Turkey (Dr Dağcı, Dr Dost, and Ms Çam).

The authors declare no conflicts of interest.

The authors declare no financial support for the study.

Correspondence: Ayşe Dost, Department of Nursing, Bezmialem Vakif University, Silahtaraga Street, No: 289 (Opposite İgdaş General Directorate), Istanbul 34050, Turkey (ayse.dost@bezmialem.edu.tr).

Accepted for publication: March 28, 2025

Early Access: April 22, 2025

DOI: 10.1097/NNE.0000000000001880

In this context, it is important to understand the potential impacts of AI-assisted video creation platforms in nursing and to discuss how to mitigate these impacts. This article aims to evaluate the potential benefits of AI-based video platforms in nursing and their risks related to information, security, and ethical issues.

Role of AI-Generated Videos in Transforming Nursing Care Practices

AI-based video production platforms offer innovative and effective solutions in various domains. AI-generated videos have the potential to serve as educational tools or simulation aids. These platforms primarily enhance patient education processes and improve access to health care services.[2] Patients sometimes find it difficult to understand topics such as perioperative care or chronic disease management. This information can effectively teach through visually rich, AI-generated videos. Traditionally, producing such videos requires significant time, equipment, and manpower for recording, editing, and post-production. However, these processes have become significantly faster, easier, and more efficient with AI.[3]

Videos easily created by AI can potentially reduce the burden of various nursing tasks, such as patient education, clinical documentation, and training of health care staff, in daily practice. AI can quickly generate routine patient education videos with just a few prompts. This allows nurses to use their time more effectively and can increase the time spent on patient care. In addition to patient education, AI-generated videos can also improve nursing education. These platforms can create videos with complex clinical scenarios and support students' critical thinking skills. AI-generated videos make it easy to create customized educational content, allowing the development of different scenarios tailored to specific learning needs instead of relying solely on standard educational videos.

AI is rapidly advancing and plays a significant role in educational settings.[14] While producing the videos, AI offers valuable opportunities for measuring and improving the effectiveness of educational materials. AI-powered platforms, such as YouTube Analytics, EdPuzzle, and interactive learning management systems, provide data on user feedback, viewership patterns, and comprehension levels. These insights help educators refine and adapt video content for more effective learning experiences. While some platforms offer basic analytics for free, advanced tracking and AI-driven adaptive learning features may require a subscription or institutional investment.[15-17] With advancements in natural language processing and adaptive learning algorithms, AI-generated content can become more reliable and aligned with current scientific knowledge. Consequently, when validated through peer review and expert evaluation, these videos may be increasingly utilized in nursing education and clinical training.

Potential Risks

The widespread adoption of AI-based video platforms enhances nursing education and patient care through personalized learning, interactive simulations, and real-time access to medical guidelines.[18] However, these innovations also bring significant risks. Even when AI is guided by accurate prompts, errors can still occur in the generated videos.[11] In a study by Fijacko et al, which evaluated the potential of AI-generated Cardiopulmonary Resuscitation (CPR) training videos, none demonstrated proper CPR techniques despite evidence-based prompts and instead contained highly inaccurate instructions.[2] Similarly, Waisberg et al documented that a video generated by Sora™ showed a person running in the opposite direction on a treadmill, highlighting another example of AI inaccuracies.[19]

Such erroneous videos can mislead viewers about correct nursing practices, endangering patient safety and diminishing the critical role of nurses in patient education. While ethical AI practices advocate for human verification, many videos are published without rigorous oversight. Ensuring accuracy in nursing education videos requires stricter validation mechanisms to safeguard patient rights and uphold professional standards. Additionally, there is a significant risk of manipulation in AI-generated videos. These videos could be intentionally designed to advertise unproven treatments, such as herbal supplements falsely claimed to cure chronic diseases such as diabetes or hypertension. Inaccurate representations of medical devices, such as an AI-generated video demonstrating incorrect usage of an insulin pump, could also mislead students, patients, and health care professionals, compromising patient safety.

Another critical risk involves bias within AI algorithms. Typically, AI models are trained on datasets that predominantly feature specific populations, resulting in certain patient groups being underrepresented or excluded. For example, if an AI-generated educational video primarily depicts young, Western patients undergoing post-surgical care, it may fail to address the specific needs of elderly individuals, people with disabilities, or those from different cultural backgrounds. This lack of inclusivity can result in misinformation, disparities in health care education, and a decline in overall patient care quality.

Moreover, the potential for manipulating AI-generated videos represents a significant risk. These videos could be exploited to promote misleading products or treatment methods, adversely affecting patient safety and public trust in the nursing profession.[19] Another critical risk involves bias within AI algorithms. AI models are often trained on datasets representing limited and specific populations, which can lead to the exclusion of diverse patient groups in nursing applications. For instance, an educational video focusing exclusively on a specific patient demographic may provide irrelevant or incomplete information for other groups, creating

disparities in information access and lowering the standards of patient care.[19] Mitigating these risks requires rigorous verification of AI-generated video content, diversification of the datasets used to train AI algorithms, and strict adherence to ethical standards in using these technologies.

Examples of AI-Generated Videos in Nursing and Patient Education

Following the exploration of the potential risks associated with AI-generated videos, this section presents specific examples to illustrate their applications and limitations in nursing education. To demonstrate the potential of generative video AI in the nursing field, researchers created videos using Sora™ (OpenAI),[20] employing prompts designed from a nursing care perspective as follows.

Video 1 Example

Prompt: In a vaccination room at a family health center, a professional-looking nurse administering an intradermal injection to a 2-month-old baby's arm (Figure 1). The nurse carefully performs the procedure while adhering to aseptic techniques. During the injection, the baby displays a tearful expression while the parents try to comfort the child, their faces showing visible tension. In the background, colorful and playful cartoon characters are depicted on the wall.

Mistakes and limitations: The nurse does not wear gloves. The nurse's hand positioning does not fully stabilize the baby's arm. The nurse has a tense expression. Additionally, the injection is administered through the clothing.

Favorable attributes: It reflects a pediatric room. The nurse appears highly focused on the procedure. Her professional attire and name badge contribute to a sense of credibility. The baby's tearful expression is realistically depicted, emphasizing infants' natural reactions during vaccinations. The presence of the parents close to the baby reflects emotional support and involvement, which is critical during pediatric procedures. The lighting is bright and natural, ensuring visibility for the procedure while maintaining a calm, clinical setting.

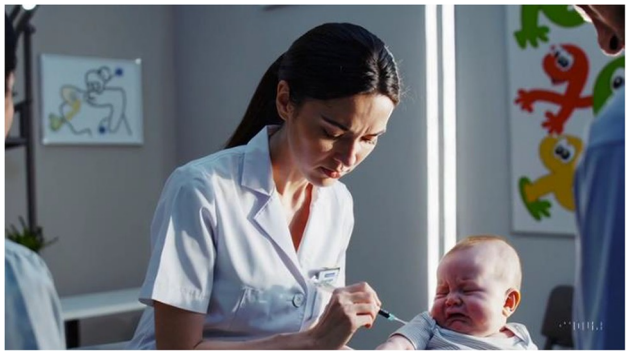

Figure 1. Gentle baby vaccination (https://sora.Com/g/gen_01jh0884k4e8c9mrvm8p0je5jt).

Video 2 Example

Prompt: A diabetic patient is at home performing a blood glucose test using proper aseptic and accurate techniques (Figure 2). The patient carefully cleans their fingertip with a swab, pricks it with a lancet, and places a drop of blood onto a test strip inserted into a glucometer. The atmosphere is calm and focused, with a clean and organized environment that emphasizes the importance of self-care and precision.

Mistakes and limitations: The patient does not prick their fingertip with the lancet but instead moves it toward the table and attempts to place the blood into the glucometer as if it were a test strip. The test strip is not visible. Specific details in the image, such as the lancet, the glucometer's screen, and the blood on the fingertip, lack clarity. Additionally, the positioning of the patient's hand and the glucometer are not aligned to demonstrate the blood glucose measurement process adequately.

Favorable attributes: The image is set in a clean and organized environment.

Video 3 Example

Prompt: A COPD patient is receiving a bronchodilator via a nebulizer, administered by a family member (Figure 3). The caregiver dispenses the medication into the nebulizer mask and turns on the device, while the patient inhales calmly.

Mistakes and limitations: The placement of the bronchodilator medication into the device is not shown. There is no indication that the machine is operational. While the mask is applied to the patient, the straps appear to attach themselves automatically. The nebulizer device is not visible. An unnecessary connection is observed on the nebulizer mask, which appears attached to the caregiver's hand. Additionally, the mask being applied to the patient does not fit properly on the patient's face.

Favorable attributes: The patient's environment is calm and straightforward. The patient's position is appropriate for administering inhaler medication.

Video 4 Example

Prompt: In an operating room, a scrub nurse dressed in a sterile gown, mask, cap, and gloves is preparing for an upcoming surgery (Figure 4). Standing next to her is a circulating nurse, holding a pack of gauze, ready to open it and pass it to the scrub nurse. The scrub nurse is focused on arranging various surgical instruments on the operating table, ensuring everything is in order for the procedure. In the background, the sterile environment of the operating room is visible but softly blurred with a bokeh effect,

Figure 2. Routine blood glucose test (https://sora.Com/g/gen_01jh09w5hseg5awy2hr9rrabad).

subtly highlighting surgical lights, an anesthesia machine, and storage cabinets filled with medical supplies. The atmosphere remains professional and calm, with a focus on precision and preparation.

Mistakes and limitations: Several errors are noticeable in the physical depiction of the operating room. On the left shelf, textile items (such as towels) that should be protected with sterile packaging are visibly left exposed. Additionally, an unexplained object protruding from the surgical light's center disrupts the scene's coherence. According to the prompt's context, during preparation for an "upcoming surgery," the scrub nurse should focus on setting up the sterile field, with the circulating nurse assisting without compromising sterility. However, both nurses are shown working in the same non-sterile environment, which creates a depiction detached from the intended context.

Favorable attributes: The scrub nurse is accurately portrayed wearing a sterile surgical gown, as described in the prompt. The light-colored walls of the operating room appropriately contribute to the sense of a sterile environment. The equipment and cabinets in the background generally reflect the realistic features of a surgical setting.

Implications for Nurse Educators

The integration of AI-generated videos into nursing education presents both opportunities and challenges for educators. These technologies offer an innovative approach to enhancing learning experiences by providing realistic visual scenarios, reinforcing complex clinical concepts, and facilitating self-paced learning. AI-generated videos, as discussed in this article, can be easily produced using standard computer systems with minimal time and manpower. Their topics and approaches can be customized to effectively address the needs of both students and patients, making them valuable educational tools. However, ensuring the accuracy and ethical use of AI-generated content requires proactive strategies from educators.

First, nurse educators must receive training on AI technologies to effectively evaluate and implement AI-generated videos in nursing education. Understanding the capabilities and limitations of AI tools will enable educators to make informed decisions about their integration into curricula.

Second, nurse educators should critically assess AI-generated videos before incorporating them into teaching materials. Given the potential for inaccuracies, educators should verify content against evidence-based guidelines and best practices. Establishing expert review mechanisms and collaborating with AI developers can help mitigate the risks associated with misleading information.

Third, ethical considerations should be addressed in AI-assisted teaching. AI-generated videos should align with professional and ethical standards in nursing education. Educators should guide students in critically analyzing AI-generated content, fostering digital literacy skills that enable them to discern reliable information from potentially biased or misleading sources. By embracing AI-generated videos with a balanced, evidence-based approach and ensuring adequate training for nurse educators, they can harness the benefits of AI while maintaining high standards of accuracy, ethics, and professionalism.

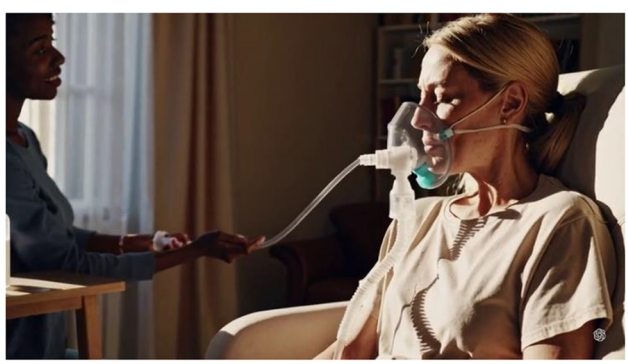

Figure 3. Comforting care at home (https://sora.Com/g/gen_01jh09tjn9e1sb8mjg6ggkc20d).

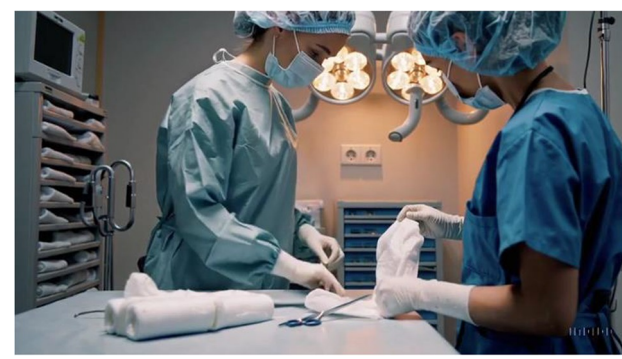

Figure 4. Surgical precision (https://sora.Com/g/gen_01jh09sweme2htp5s01xfx7q11).

Conclusion

AI-generated videos hold significant potential to support nursing education and patient education processes. However, it is critical to acknowledge the risks of these technologies, such as disseminating misinformation, ethical concerns, and biases. Ensuring the accuracy of content, enhancing the inclusiveness of algorithms, and adhering to ethical standards are of critical importance. Collaboration between health care professionals and AI developers is essential for creating robust verification mechanisms. These mechanisms can ensure the safe and effective use of AI technologies in nursing practice. Nevertheless, further scientific research is needed to fully understand the potential impacts of these technologies on nursing practice.

References

1. Karaarslan E, Aydın Ö. Generate impressive videos with text instructions: a review of OpenAI Sora, stable diffusion, lumiere and comparable models. *TechRxiv*. 2024. doi:10.36227/techrxiv.170862194.43871446/v1
2. Fijačko N, Stiglic G, Topaz M, Greif R. Using OpenAI's text-to-video model Sora to generate cardiopulmonary resuscitation content. *Resuscitation*. 2024;279:110484. doi:10.1016/j.resuscitation.2024.110484
3. Netland T, Dzengelevski O, Tesch K, Kwasnitschka D. Comparing human-made and AI-generated teaching videos: an experimental study on learning effects. *Comput Educ*. 2025;224:105164. doi:10.1016/j.compedu.2024.105164
4. Adeboye W, Tayal V, Odubanjo E, et al. Artificial intelligence in the delivery of patient care: avatar-generated videos for patient education post breast surgery. *Eur J Surg Oncol*. 2024;50:108076. doi:10.1016/j.ejso.2024.108076
5. Güner SG, Tezel M, Özsaban A. The content, reliability, and quality of insulin pen injection videos on YouTube as patient education resource. *Comput Inform Nurs*. 2024;42(11):809-816. doi:10.1097/CIN.0000000000001182
6. Galmarini E, Marciano L, Schulz PJ. The effectiveness of visual-based interventions on health literacy in healthcare: a systematic review and meta-analysis. *BMC Health Serv Res*. 2024;24(1):718. doi:10.1186/s12913-024-11138-1
7. Kumari MJ, Vahitha S, Kubera NS. Effectiveness of video-assisted teaching on prevention of constipation among postpartum women admitted in postnatal ward at a tertiary care hospital: a randomised controlled trial. *BMJ Nutr, Prev & Health*. 2024;7(1):128. doi:10.1136/bmjnph-2022-000605
8. Aria R, Archer N. Using an educational video vs. in-person education to measure patient perceptions of an online self-management support system for chronic illness. *Comput Human Behav*. 2018;84:162-170. doi:10.1016/j.chb.2018.01.041
9. Kirkland-Kyhn H, Generao SA, Teleten O, Young HM. Teaching wound care to family caregivers: an overview of methods to use to promote wound healing. Home healthcare now. *Home Healthc Now*. 2022;40(1):8-13. doi:10.1097/01.NAJ.0000530941.11737
10. Sumengen AA, Kirtil I, Subasi DO, Cakir GN, Kucukakca GT. Enhancing pediatric stoma care: analyzing YouTube videos for pediatric stoma pouch changing techniques. *J Pediatr Nurs*. 2024;79:e77-e85. doi:10.1016/j.pedn.2024.10.002
11. Daungsupawong H, Wiwanitkit V. Text-to-video generative artificial intelligence: Sora in neurosurgery: correspondence. *Neurosurg Rev*. 2024;47(1):298. doi:10.1007/s10143-024-02541-7
12. Li HO, Bailey A, Huynh D, Chan J. YouTube as a source of information on COVID-19: a pandemic of misinformation? *BMJ Glob Health*. 2020;5(5):e002604. doi:10.1136/bmjgh-2020-002604
13. Mohamed AA, Lucke-Wold B. Text-to-video generative artificial intelligence: Sora in neurosurgery. *Neurosurg Rev*. 2024;47(1):272. doi:10.1007/s10143-024-02514-w
14. Ali O, Murray PA, Momin M, Dwivedi YK, Malik T. The effects of artificial intelligence applications in educational settings: challenges and strategies. *Technol Forecasting Social Change*. 2024;199:123076. doi:10.1016/j.techfore.2023.123076
15. Ramasany V, Noor NM, Zaid NM. Effects of learning using EDPUZZLE interactive video application on students' interest, engagement and achievement in science subjects. *Innov Teach Learn Jl*. 2022;6(2):59-72. doi:10.11113/itlj.v6.111
16. Kadoić N, Oreški D. Learning analytics of YouTube videos linked to LMS Moodle. In: *44th International Convention on Information, Communication and Electronic Technology (MIPRO) - proceedings book;*. 2021;570-575. doi:10.23919/MIPRO52101.2021.9597168
17. Dutta S, Ranjan S, Mishra S, Sharma V, Hewage P, Iwendi C. Enhancing educational adaptability: a review and analysis of AI-driven adaptive learning platforms. In: *4th International Conference on Innovative Practices in Technology and Management (ICIPTM) book;*. 2024;1-5. doi:10.1109/ICIPTM59628.2024.10563448
18. Georgieva-Tsaneva G, Serbezova I, Beloeva S. Application of virtual reality, artificial intelligence, and other innovative technologies in healthcare education (nursing and midwifery specialties): challenges and strategies. *Educ Sci*. 2025;15(1):11. doi:10.3390/educsci15010011
19. Waisberg E, Ong J, Masalkhi M, Lee AG. Concerns with OpenAI's Sora in medicine. *Ann Biomed Eng*. 2024;52(8):1932-1934. doi:10.1007/s10439-024-03505-0
20. OpenAI. *Sora: Creating video from text*. Available at: https://openai.com/sora