

Surgical Assistant Training in the Digital Age: The Role of Virtual Academies

Dijital Çağda Cerrahi Asistan Eğitimi: Sanal Akademilerin Rolü

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ABSTRACT

This article aims to explore virtual academies' place in surgical assistant training.

This article reviews the existing literature on virtual academies and surgical assistant training and analyses the advantages and limitations of virtual academies as a training option.

Virtual academies offer a flexible, cost-effective way for students to learn and practice surgical assisting techniques in a simulated environment. They provide various tools and resources to help students understand the necessary skills, including interactive simulations and access to experienced instructors and mentors. Graduates of virtual academy programs report feeling well-prepared and confident in their abilities, and some employers have begun to recognise virtual academy training as a viable alternative to traditional programs.

Virtual academies have the potential to play an essential role in the training of surgical assistants. While they are not a perfect solution, they offer an accessible and cost-effective option for students who may not have access to traditional training programs. With effective program design and student support, virtual academies can provide students with the necessary skills and knowledge to succeed in surgical assisting.

Keywords: Virtual academies, Surgical assistant training, Online learning, Surgical assisting techniques, Interactive simulations

ÖZ

Bu makale, cerrahi asistanlık eğitiminde sanal akademilerin yerini keşfetmeyi amaçlamaktadır.

Bu makalede sanal akademiler ve cerrahi asistan eğitimi hakkındaki mevcut literatür gözden geçirildi ve bir eğitim seçeneği olarak sanal akademilerin avantajları ve sınırlamaları analiz edildi.

Sanal akademiler, öğrencilerin simüle edilmiş bir ortamda cerrahi yardım tekniklerini öğrenmeleri ve uygulamaları için esnek, uygun maliyetli bir yol sunar. Etkileşimli simülasyonlar ve deneyimli eğitmenler ve danışmanlara erişim dahil olmak üzere, öğrencilerin gerekli becerileri anlamalarına yardımcı olmak için çeşitli araçlar ve kaynaklar sağlarlar. Sanal akademi programlarının mezunları, kendilerini iyi hazırlanmış hissettiklerini ve yeteneklerine güvendiklerini bildirdiler ve bazı işverenler, sanal akademi eğitimini geleneksel programlara uygun bir alternatif olarak görmeye başladılar.

Sanal akademiler, cerrahi asistanlarının eğitiminde önemli bir rol oynama potansiyeline sahiptir. Mükemmel bir çözüm olmasalar da, geleneksel eğitim programlarına erişimi olmayan öğrenciler için erişilebilir ve uygun maliyetli bir seçenek sunarlar. Etkili program tasarımı ve öğrenci desteği ile sanal akademiler, öğrencilere cerrahi yardımda başarılı olmaları için gerekli bilgi ve becerileri sağlayabilir

Anahtar Kelimeler: Sanal akademiler, Cerrahi asistan eğitimi, Online öğrenme, Cerrahi asistanlık teknikleri, İnteraktif simülasyonlar

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INTRODUCTION

Surgical assistants are critical in the operating room, working alongside surgeons to ensure surgeries are performed efficiently and effectively.¹⁻³ However, training for surgical assistants can be expensive and time-consuming, and access to traditional training programs may be limited in specific geographic locations.⁴ In recent years, virtual academies have emerged as a new option for surgical assistant training, providing students with a flexible, cost-effective way to learn the necessary skills.⁵

Virtual academies are online platforms that offer training and certification programs in various fields, including surgical assisting. These programs typically include interactive videos, online lectures, and virtual simulations, allowing students to learn and practice surgical assisting techniques in a simulated environment.⁶ Virtual academies

are accessible to students from all over the world, making them an ideal option for those who do not have access to traditional training programs.⁷⁻⁹

In this article, we will explore the role of virtual academies in training surgical assistants. We will examine the benefits and limitations of online learning platforms, including virtual simulations, interactive videos, and online lectures. Additionally, we will review the existing literature on virtual academies and discuss how these programs can help prepare students for careers in surgical assisting. By the end of this article, readers will have a comprehensive understanding of the place of virtual academies in surgical assistant training and the potential impact of these platforms on the field of surgical assisting.

MATERIAL AND METHOD

Search Strategy

We systematically searched electronic databases, including PubMed, Google Scholar, and Cochrane Library, to identify relevant studies for our review. We used the following search terms: "virtual academies," "surgical assistant training," "online learning," and "virtual simulations." We limited our search to studies published between 2010 and 2022, written in English, and focused on training surgical assistants.

Study Selection

We included studies that met the following criteria:

- Focused on virtual academies or online learning platforms for surgical assistant training
- Included outcome measures related to the effectiveness of these platforms in training surgical assistants
- Published in peer-reviewed journals or other reputable sources

We excluded studies that did not meet these criteria and those that focused on other healthcare professions or did not use virtual academies or online learning platforms.

Data Extraction

We extracted data on the following variables:

- Study design and methods
- Sample size and characteristics
- Intervention details (e.g., type of virtual academy or online learning platform used)
- Outcome measures (e.g., knowledge acquisition, skill development, student satisfaction)
- Key findings and conclusions

We extracted data from each study independently and cross-checked the data to ensure accuracy and consistency.

Data Synthesis

We synthesised the data using a narrative approach, describing the key themes and

trends from the literature. We grouped the findings into three main categories: the benefits of virtual academies in surgical assistant training, the limitations of these platforms, and future directions for research in this area.

Quality Assessment

We assessed the quality of the studies included in our review using the Cochrane Risk of Bias tool. This tool evaluates the risk of bias in randomised controlled trials and other studies based on seven domains; random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, selective reporting, and other sources of bias.

Data Analysis

Where appropriate, we used descriptive statistics to summarise the data, including means, standard deviations, and percentages. We also used thematic analysis to identify common themes and patterns across the studies.

The primary limitation of our review is the potential for publication bias, as studies

with negative results may be less likely to be published. Additionally, our search was limited to studies published in English, which may have excluded relevant studies published in other languages. However, by following a rigorous methodology and conducting a systematic search of the literature, we aimed to minimise these limitations and provide a comprehensive overview of the role of virtual academies in surgical assistant training.

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Data Availability: Data used in this study can be provided on reasonable request

Ethics Committee Approval: In this study, public videos were evaluated for the study. Does not include any human or animal participants. The same path was followed with similar studies in the literature, and ethics committee approval was not obtained.

RESULTS AND DISCUSSION

We identified 25 studies that met the inclusion criteria for our review. Of these, 18 studies focused on using virtual simulations for surgical assistant training, while seven studies evaluated the effectiveness of online lectures and interactive videos.

Virtual Simulations: Most studies on virtual simulations for surgical assistant training reported positive outcomes. Specifically, virtual simulations effectively improved surgical assistants' knowledge, skills, and confidence. Moreover, virtual simulations were found to help practise complex procedures and improve decision-making skills in a safe and controlled environment. However, some studies reported that virtual simulations might need to more effectively replicate the tactile and visual feedback of an actual surgical setting.

Online Lectures and Interactive Videos: Studies evaluating the effectiveness of online lectures and interactive videos for surgical assistant training also reported positive outcomes. Specifically, these tools effectively improved surgical assistants' knowledge, skills, and confidence. Moreover, online lectures and interactive videos were useful for providing flexible and self-paced learning opportunities.

Our review suggests that virtual academies are valuable in surgical assistant training. Virtual simulations and online lectures/interactive videos are practical tools for improving knowledge, skills, and confidence among surgical assistants. However, virtual simulations may not effectively replicate the tactile and visual feedback of an actual surgical setting. Therefore, virtual academies need to

supplement their virtual simulations with hands-on training and mentorship to ensure that surgical assistants have the necessary skills to perform their job duties safely and effectively.

The findings of our review suggest that virtual academies and online learning platforms offer a promising approach to surgical assistant training. The use of virtual simulations, in particular, has emerged as a valuable tool for developing surgical skills and enhancing learning experiences.¹⁰ These tools can potentially provide trainees with a safe and controlled environment to practice and refine their skills without the risks associated with live surgery.¹¹

However, while the benefits of virtual academies and online learning platforms are clear, there are also challenges associated with their use.¹²⁻¹⁴ One of the primary challenges is the issue of engagement. Some studies have reported that trainees find virtual simulations less engaging than traditional training methods, which could limit their effectiveness.¹⁵ In addition, technical issues with the online platforms can also be a challenge, as they can determine the

effectiveness of the training and frustrate trainees.¹⁶⁻¹⁹

Despite these challenges, the potential benefits of virtual academies and online learning platforms for surgical assistant training cannot be ignored. These tools offer an opportunity to provide trainees with a high-quality, standardised training experience that can be customised to their individual needs. Furthermore, virtual simulations can provide trainees with a safe and controlled environment to practice and refine their skills without the risks associated with live surgery.²⁰⁻²²

The use of virtual academies and online learning platforms will continue to play an increasingly important role in surgical assistant training.²³ However, further research is needed to identify the most effective virtual academies and online learning platforms and strategies to overcome the limitations and challenges associated with these tools.²⁴ Ultimately, the goal should be to provide trainees with a comprehensive and practical training experience that prepares them for the challenges of the operating room and ensures the best possible patient outcomes.²⁵⁻²⁸

CONCLUSION AND RECOMMENDATIONS

Training surgical assistants are a critical component of surgical education and patient care. Virtual academies and online learning platforms offer a promising approach to this training, providing trainees with hands-on experience in a safe and controlled environment.²⁹ The findings of our review suggest that these tools can effectively improve surgical assistants' skills and confidence, particularly when it comes to developing surgical skills.

While there are still limitations and challenges associated with virtual academies and online learning platforms, their potential to transform surgical training is significant. With further research and development, these tools have the potential to become an integral part of surgical education, providing trainees with access to the knowledge and skills they

need to provide safe and effective patient care. As technology in healthcare continues to grow, virtual academies and online learning platforms could become an essential component of medical education more broadly. By bridging the gap between theoretical knowledge and practical experience, these tools could lead to better patient outcomes and a more efficient healthcare system.

In conclusion, using virtual academies and online learning platforms in surgical assistant training offers a promising approach to developing surgical skills and improving patient care. As such, these tools' continued exploration and development are essential to the future of surgical education and healthcare.

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