

## Evaluating the Impact of COVID-19 on the Surgical Skills Development of Medical Students at Maharat Nakhon Ratchasima Hospital

Natthapong Saengow, M.D.\*,  
Vitchyaporn Emarach Saengow, M.D.\*\*

### Abstract

The COVID-19 pandemic significantly impacted medical education, particularly for students in surgical training. This study surveyed 20 medical students (70% female) from the 4<sup>th</sup> to 6<sup>th</sup> year who rotated through the Surgery department at Maharat Nakhon Ratchasima Hospital from January 1, 2020, to January 31, 2022. Findings revealed that while 80% held positive attitudes toward the surgical skills they acquired, only 50% practiced procedures, such as wound dressing and suturing, 1-3 times a week. Concerns regarding health risks associated with COVID-19 were prevalent, with 55% of students feeling their health was adversely affected by potential exposure. The decrease in patient volume during lockdowns further strained clinical educational opportunities. Despite these challenges, students demonstrated resilience and a commitment to learning, underscoring the need for enhanced support systems and innovative training methods to foster their surgical competencies in such unprecedented times.

### บทคัดย่อ

การแพร่ระบาดของ COVID-19 ส่งผลกระทบต่อการเรียนการสอนและการศึกษาของแพทย์ โดยเฉพาะสำหรับนักศึกษาแพทย์ที่รับการฝึกที่แผนกศัลยกรรม การศึกษาในครั้งนี้สำรวจนักศึกษาแพทย์จำนวน 20 คน (เพศหญิง 70%) ในชั้นปีที่ 4 ถึง 6 ที่เข้ารับการเรียนการสอนในภาควิชาศัลยกรรมที่โรงพยาบาลมหาราชนครราชสีมา ตั้งแต่วันที่ 1 มกราคม 2563 ถึง 31 มกราคม 2565 โดยผลการศึกษาพบว่า 80% ของนักศึกษาแพทย์ ยังมีทัศนคติที่ดีต่อทักษะการผ่าตัดที่ได้เรียนรู้ในช่วงการแพร่ระบาดของ COVID-19 แม้มีเพียง 50% ที่ได้ฝึกปฏิบัติกระบวนการและหัตถการต่างๆ เช่น การพันแผลและการเย็บแผล เพียง 1-3 ครั้งต่อสัปดาห์ นอกจากนี้ ยังพบว่านักศึกษาแพทย์มีความกังวลเกี่ยวกับความเสี่ยงด้านสุขภาพที่เกี่ยวข้องกับ COVID-19 โดย 55% ของ

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\*Department of Surgery, Maharat Nakhon Ratchasima Hospital, Thailand

\*\*Department of Pediatrics, Maharat Nakhon Ratchasima Hospital, Thailand

นักเรียนรู้สึกกังวลจากการสัมผัสผู้ป่วยที่ติดเชื้อ COVID-19 และพบว่าการลดลงของจำนวนผู้ป่วยเนื่องจากนโยบาย lockdown ทำให้โอกาสในการทำหัตถการทางคลินิกลดน้อยลง อย่างไรก็ตาม นักศึกษาแสดงให้เห็นถึงความเข้มแข็งและความมุ่งมั่นในการเรียนรู้ การศึกษานี้เน้นถึงความจำเป็นในการสนับสนุนระบบการเรียนการสอนและวิธีการฝึกฝนทางหัตถการทางศัลยกรรมในช่วงเวลาที่เกิดโรคระบาดขึ้นและอาจจะนำมาพัฒนานวัตกรรมเพื่อสนับสนุนการเรียน และการทำหัตถการของนักศึกษาแพทย์ต่อไป

## Introduction

The COVID-19 pandemic has significantly altered medical education, particularly in surgical training. The implementation of social distancing measures and lockdown policies has limited direct patient interactions and hands-on experience in surgical practices for medical students. This study explores the impact of the pandemic on surgical skills and clinical reasoning among medical students at Maharat Nakhon Ratchasima Hospital, Thailand.

## Methods

To gauge the experiences of medical students during the COVID-19 era, we developed a structured questionnaire targeting 4<sup>th</sup> to 6<sup>th</sup>-year medical students who participated in surgical rotations from January 1, 2020, to January 31, 2022. The questionnaire assessed their exposure to clinical procedures, the frequency of hands-on practice, and their concerns related to the pandemic's impact on their health and learning.

## Results

Out of the 20 students recruited for this study, 70% were female, with 45% in their 4<sup>th</sup> year and 35% in their 5<sup>th</sup> year. Although 80%

of participants maintained a positive attitude toward their procedural skill acquisition, only 50% had opportunities to practice surgical procedures (both simulations and real cases) 1-3 times per week. The predominant procedures practiced included wound dressing and suturing. However, 55% expressed significant concerns regarding their health, emphasizing the risks of COVID-19 exposure, which occasionally resulted in them postponing attendance in clinical settings. Additionally, students noted a decrease in patient volumes during lockdowns, impacting their training opportunities.

## Discussion

The findings illustrate a dual impact of the COVID-19 pandemic on surgical education: while students expressed a commitment to learning and retained positive attitudes towards surgery, the constraints imposed by the pandemic severely affected their exposure to hands-on practice and clinical reasoning development. The limited patient interactions and social distancing protocols hindered not only skill acquisition but also the vital process of learning through realworld clinical reasoning. Surgical competence is closely tied to repeated exposure and practice. The reduction in available cases diminished the

opportunities for students to develop their clinical skills, particularly in complex procedures. Furthermore, the psychological stress due to health concerns adds another layer of complexity that can impede learning. Students reported a strong sense of responsibility for patient care while grappling with their fear of potential infection.

### Learning points

In response to these challenges, it is crucial for medical faculties to adapt their teaching methodologies. Incorporating more simulation-based training, virtual learning platforms, and remote patient monitoring programs can help ensure that students continue to develop their surgical skills and clinical reasoning during crises. Institutions should also provide students with mental health resources and support systems to help mitigate the psychological stress stemming from the pandemic.

### Conclusion

The COVID-19 pandemic has undeniably affected the education and training of medical students, specifically regarding surgical skills and clinical

reasoning. While students displayed resilience and a positive approach towards their learning, the need for innovative instructional methods and psychological support is paramount for the future of medical education. Engaging students in alternative learning modalities and providing opportunities for skill enhancement will be essential in overcoming the challenges posed by the pandemic.

### References

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