



# Analysis of the impacts of health service closure policy on Indonesian nursing during COVID-19 pandemic: A literature review

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## ABSTRACT

**Background:** The COVID-19 pandemic has been over yet; one of the effects of this pandemic is plenty of hospitals in Indonesia have been applying for temporary health service closure.

**Objective:** This study aimed to analyse the effect of health service closure during the COVID-19 pandemic.

**Design:** Simple study literature is the method for this study.

**Data Sources:** This study used two different search processes. The first search process came from online news platforms (detik.com, kompas.com, and okezone.com), which used a combination of the words "COVID-19", "emergency room", "hospital", and "closed" during November 2020. The second search was from the database (CINAHL, ProQuest, ScienceDirect, PubMed, SpringerLink, and Wiley Online).

**Review Methods:** The guidelines of the second search used Preferred Reporting Items for Systematic Review and Meta-Analysis. Both searching processes applied COVID-19 and hospital closed or emergency department closed as the keywords from November 2020-January 2021.

**Results:** The first finding showed more than 300 news about health service closure, and the second showed 13 selected articles. There were 42 health service unit closures from 16 provinces in Indonesia. These closures had disadvantages effect for patients, nursing care and nursing education side.

**Conclusions:** Total or partial health service closure could be happened due to increased patient capacity, delays in the treatment of the patient, many nurses getting infected by COVID-19, and nursing students cannot practice directly. Therefore, this issue needs innovative solutions to keep the nursing student placement going well by considering safety for the patient, nurses, nursing students, and trainer/ facilitator.

**Keywords:** closure; COVID-19; emergency health service

## INTRODUCTION

Data on COVID-19 test numbers that have been done is still developing. The result of the Polymerase Chain Reaction (PCR) test in some countries increased the number of confirmed cases, hospitalised number, and mortality rate, which

## Nursing and Healthcare Practices

- *The pandemic resulted in the partial or total closure of health services.*
- *The shortage of nurses is very drastic, while the number of patients is increasing.*
- *Nursing students are the choice to be involved in meeting the needs of health workers and consulting services can be optimized online*

also happened in Indonesia. These things are being concerned and pressured toward global health service, which is becoming worse these days (Dewart et al., 2020). Since 12 January 2021 Indonesian government, with COVID-19 Response Acceleration Task Force, has been reporting 836.718 cases of COVID-19 positive with a mortality rate of 2.9% (Satgas COVID-19, 2021).

The government has done many ways to decrease mortality and new cases, including applying social distancing (Pradana et al., 2020). Some Java and Bali Island provinces have been using Large-Scale Social Restrictions (*Pembatasan Sosial Berskala Besar/ PSBB*) stage two. However, many obstacles must be faced, especially the high rate of covid 19 new cases among health staff 8.692 new cases have been confirmed, and 34 provinces have been struggling with this increasing case. Five provinces with the highest number, such as the Provincial Government of Special Capital Territory of Jakarta (24.9%), West Java (11.8%), East Java (11.2%), Central Java (11.1%), dan South Sulawesi (4.4%) (Satgas COVID-19, 2021).

The increasing case impacted the health sector, one of them being health workers. Occupational Safety and Health Act (OSHA) classified health workers, including nurses, take high-risk jobs being infected by COVID-19 (U.S. Department of Labor, 2020). In Indonesia, since 1 October 2020, 92 nurses have died from COVID-19 (INNA, 2020). This issue could impact health services in Indonesia. A high number of confirmed COVID-19 cases and limited human resources in health service centres (hospitals, community health centres, and other health services) impacted the

closure of temporary health services (Nasution et al., 2021). So far, no data have shown the number of health service closures in Indonesia. However, this closure directly impacts health service, and nursing is the front line in the health service area. Therefore, this closure affects the nursing sector in providing care and education. This article analyses the effect of policy in health service closure, such as hospital and community health centres in Indonesia, on the nursing sector in nursing service to patients and nursing practice (clinical nurse and nursing education).

## METHODS

### Design

This article is based on a simple literature study method.

### Search methods

Two search processes were applied. Firstly, searching about health service closure through some online news sources verified by the press council, such as detik.com, Kompas.com, and okezone.com. The keyword those been used are a combination of some words, "COVID-19", "emergency room", "hospital", and "closed" during November 2020. The second step was a search process about the impact and policy related to Emergency Room (ER) and hospital closure during the COVID-19 pandemic. These articles were available from some databases such as Cumulative Index to Nursing and Allied Health Literature (CINAHL), ProQuest, ScienceDirect, PubMed, SpringerLink, dan Wiley Online by using combination keywords "COVID-19", "emergency department closed", or "hospital closed" from November 2020-January 2021. The second data search used Preferred Reporting Items for Systematic Review and Meta-Analyses guidelines.

### Inclusion and exclusion criteria

Inclusion criteria while searching online news in the first step used (a) Indonesian language news and (b) contains information about ER or hospital closure during the COVID-19 pandemic. And for the second step, articles searching that has been applied, such as (a) English language articles, (b) containing information about ER or hospital closure during the COVID-19 pandemic, (c) articles published in the last three years, (d) full text.

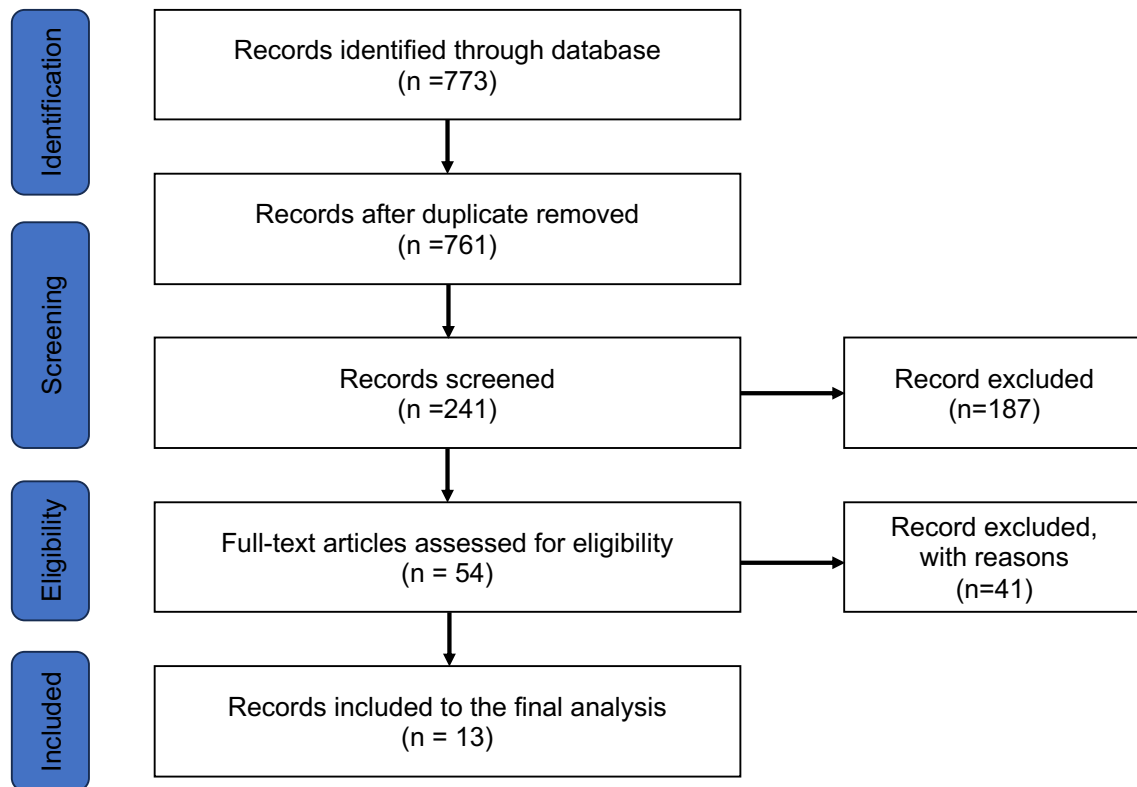


Figure 1. PRISMA flow chart

## Data extraction

This article identifies the first step with the number of healthcare closures during COVID-19 by analysing the types of healthcare or emergency room closures in provinces of Indonesia. The news was excluded without mentioning the name of the health service (only the initial of the health service). At the same time, the second step of the selection process is based on identifying articles that meet the inclusion and exclusion criteria, with the final results being synthesised according to the theme of the impact of the closure of health services during the pandemic.

## RESULTS

The first process generated more than 300 news that explained ER or hospital closure during the COVID-19 pandemic in Indonesia, 192 news from detik.com, 100 from Kompas.com, and 74 from okezone.com (see table 1). Then, the second process generated 13 articles from 773 articles that explained about impact and policy of ER or hospital closure during the COVID-19 pandemic (Figure 1).

## Number of Health Service Closures During Pandemic

Table 1 shows 42 health services closures in Indonesia until 10 November 2020. This closure was started in May and was created by five health service closures. The highest number of closures happened in August 2020. East Java province has become an area with the highest number of closures (12 health services from 9 cities). These closures vary started from 24 hours until 14 days. Many considerations were taken. Those were chosen to close for one to three days due to the need for more time for sterilisation and COVID-19 contact tracking—the others who decided to close for 14 days aimed to apply self-isolation, which got positive results.

## DISCUSSION

### Type of Health Service Closure

Based on 42 health service closures in Indonesia, there are two types of health service closures (Table 2). The first type is

**Table 1.** Incidence of health service closure in Indonesia in 2020

Province	City	Hospital	Month on 2020							
			5	6	7	8	9	10	11	
Aceh	Karang Baru	Aceh Tamiang Regional Public Hospital			v					
	Bener Meriah	Muyang Kute Hospital			v					
Special Region of Yogyakarta	Yogyakarta	Pratama Yogya Hospital				v				
Banten	Cilegon	Cilegon Regional Public Hspital		v						
Central Java	Sragen	dr Soehadi Prijonegoro Regional Public Hspital							v	
	Surakarta	Ngipang Regional Public Hspital							v	
	Kudus	Kaliwungu Community Health Cente	v							
East Java	Madiun	Patihan Community Health Cente		v						
	Situbondo	Asembagus Community Health Cente		v						
	Probolinggo	Waluyo Jati Regional Public Hospital				v				
		Maron Community Health Cente				v				
		Pajarakan Community Health Cente					v			
	Tuban	Tuban Regional Public Hospital						v		
	Pasuruan	Bangil Regional Public Hospital					v			
	Blitar	Ngudi Waluyo Regional Public Hospital			v					
		Wlingi Community Health Cente			v					
	Nganjuk	Nganjuk Regional Public Hospital		v						
	Surabaya	Unair Hospital	v							
	Ponorogo	Sawoo Community Health Cente			v					
West Java	Cimahi	Cibabat Regional Public Hospital				v				
	Tasikmalaya	Bunda Aisyah Mother and Children Hospital					v			

**Table 1.** Incidence of health service closure in Indonesia in 2020 (*continue...*)

	Cirebon	Gunung Jati Regional Public Hospital	v				
	Sukabumi	Pelabuhan Ratu Regional Public Hospital	v				
	Depok	Depok Regional Public Hospital	v				
East Kalimantan	Balikpapan	Kanjoso Djatiwibowo Regional Public Hospital	v				
	Samarinda	IA Moeis Regional Public Hospital	v				
	Samarinda	Samarinda Medika Citra Hospital	v				
South Kalimantan	Hamalau	Briggend Hasan Basry Regional Public Hospital	v				
Riau	Batam	Embung Fatimah Regional Public Hospital	v				
North Kalimantan	Nunukan	Nunukan Regional Public Hospital	v				
West Sumatera	Batusangkar	M. Ali Hanafiah Regional Public Hospital	v				
	Solok	Arosuka Regional Public Hospital	v				
	Padang Panjang	Padang Panjang Regional Public Hospital	v				
	Padang	Bhayangkara Hospital	v				
Jambi	Jambi	Raden Mattaher Regional Public Hospital	v				
South Sulawesi	Sidrap	Nene Mallommo Public Hospital	v				
	Makassar	Daya Regional Public Hospital	v				
	Takalar	H. Padjonga Dg Ngalle Regional Public Hospital	v				
West Nusa Tenggara	Lombok Tengah	Cahaya Medika Praya Hospital	v				
Maluku	Salahutu	dr Ishak Umarella Regional Public Hospital	v				
West Papua	Sorong	Sele Be Solu Public Hospital	v				
<b>Total per month</b>			<b>5</b>	<b>8</b>	<b>8</b>	<b>12</b>	<b>4 3 2</b>



total closure which has two subtypes. The first subtype is total closure for all the patients. So, the hospital did not accept any patients at all. The reason for these health providers' closures is dominated of COVID-19 cases in health staff that have been confirmed before. So this closure expects to end the spreading and decrease virus contamination risk. Health workers were confirmed COVID-19 positive during the closure, found in highest number at dr. Soehadi Prijonegoro Regional Public Hospital with a total of 77 cases among health staff. Then, our analysis related to other types of total closure showed that even though there was total closure for general health services, the hospital was still open for health staff and happened in Bhayangkara Hospital Padang. The second type is temporary closure. This type was applied due to overcapacity. So, they could not accept COVID-19 patients (happened in Airlangga Hospital Surabaya) or temporarily close certain wards in the hospital for the general patient because some health staff were confirmed as COVID-19 positive.

## Impact and Solution Related to

### Health Provider Closure

Researchers' analysis of literature findings showed that the number of nurse staff available and care load capacity for the patient had caused both total and temporary health closure during this pandemic in Indonesia. Indeed, this problem could cause changes and differences related to nursing care for nursing, patient, and nursing education.

### Patient

The number of patients who came to ER has decreased since the beginning of the pandemic and then started to increase in line with the peak of cases during the pandemic. This number will stay high if the pandemic still happens for a longer time. This pandemic condition also has an increased risk of delaying case handling due to a bundle of protocols for

checking COVID-19 infection cases (Lo et al., 2020). Furthermore, the COVID-19 pandemic had an impact on the general condition of the available patient that was hospitalised. Patients had anxiety, fear, and panic about being transmitted with COVID-19 (Apisarnthanarak et al., 2020). On another side, fear and anxiety could be increased among both mothers and children, for example, due to health service closure and policy changes, which makes parents unable to accompany their children in receiving health services (Chanchlani et al., 2020). Then, the increasing COVID-19 confirmed cases became a risk for hospital closure due to overcapacity. The hospital has been trying to adapt the increasing capacity for balancing increased cases, called surge capacity, which is a solution that the hospital could do to prevent over-capacity. This solution comes along with adding more health staff. However, if the condition happened already, hospitals would have to take steps to fix the effect of COVID-19 highly increased case number. The hospital could reduce the number of elective surgeries scheduled to decrease inpatient numbers. Then, patient bed capacity could be available. Moreover, optimising information through online media needs to be done to reduce transmission risk.

Decreasing the number of scheduled elective surgeries could reduce eight inpatient number in acute service and one patient in critical service per day (O'Glasser et al., 2020). If bed capacity could be increased, then nurse staff that will work on it have to be prepared and set the patient criteria. Patients with mild symptoms who could be handled at home have to go through media online service. This service uses the telehealth concept (Flannery et al., 2020; Jones et al., 2020; Shenoj et al., 2020). Telehealth systems have become the correct solution for preventing COVID-19 transmission in hospitals. A systematic review explained telehealth is the correct system to minimise the risk of COVID-19 transmission. This solution potentially prevents any direct

**Table 2.** Health service closure type happened in Indonesia 2020

Closure Type	Explanation
Total closure	Health provider which have closure did not accept any patient at all, patients were referred to another health service nearby.
Temporary Closure	Health provider which had closure due to certain reason. Therefore only certain wards or division were closed. The rest of them still open for providing service.

physical contact, gives sustainable care to the patient, and, finally, decreases the morbidity and mortality rate of COVID-19 (Monaghesh & Hajizadeh, 2020). Then, telehealth could provide pre-hospital emergency service through an emergency medical system based on an internet application with mobile web service. This system effectively applies in cardiac arrest conditions and pre-hospital accidents (Fahmi & Nurachmah, 2020).

Telehealth also could be applied to pregnancy services during the pandemic, which has limited patient-giving services. This limitation makes pregnant women limited in receiving antenatal care. Patients with normal pregnancies could have online consultations through the website or phone provided by the hospital. However, the family cannot accompany pregnant women who want antenatal services. This new policy limits the number of visitors to prevent COVID-19 (Coxon et al., 2020). Then, for the hospital that still has not applied telehealth yet, related to internet coverage and mother understanding related to pregnancy check with telehealth, the hospital could use the recommendation from the Indonesian Society of Obstetricians and Gynaecologists (ISOG). That recommendation stated pregnant women with no COVID-19 symptoms could have antenatal care service four times. There will be one session in the first trimester at 10-12 weeks pregnant, one session in the second trimester at 20-22 weeks pregnant, and each session in the third trimester from 30 to 34 weeks pregnant. This session surely will provide by applying proper pregnancy history assessment for whom will get this antenatal care serv from a health provider (ISOG, 2020).

This change could be a concern for mothers who are delivering babies, but it does not make mothers right become less in getting pain management services in the parturition process and water birth. For a mother who will take delivery of a baby, just one family member will be allowed to become a companion. Companions must wear personal protective equipment and perform physical distancing from a patient during parturition sessions (Liao et al., 2020). This thing will impact the patient's confidence and convenience during parturition. Another limitation in postpartum this time is skin to skin in postpartum will be done following health protocols such as using a mask and washing hands before contact with the baby (Coxon et al., 2020). Besides maternity services, COVID-19 cases in children should

also be a particular concern. This condition makes children need to be accompanied still with parents during hospitalised. However, in reality, it will be different for every hospital. The hospital needs to have a standard policy in limiting visitors and companions for the patient, but children always need their families during hospitalisation. The presence of the closest person or family member could be facilitated by video calling.

## Nurse

The increasing number of patients caused hospital closure, and many staffs were also confirmed positive for COVID-19. The hospital could make regulations for teams who confirmed favourable either with a symptom or not. If the patient show symptom, then they could be continued self-isolation according to COVID-19 management guideline released by The Indonesian Society of Respiriology, Indonesian Heart Association, Indonesian Society of Internal Medicine, Indonesian Society of Anaesthesiologists, and Indonesian Pediatric Society in 2020. Indeed this makes nurse and patient ratio would not be safe anymore. The ratio gap between nurse and patient could harm the patient's nursing care. This thing also puts patient safety at risk. So, ER closure and inpatient service for COVID and non-COVID will continue until the condition becomes stable.

In this condition, the first thing that the hospital should do is to give an announcement about the closure process to the service user or patient. Hospitals must be concerned about how they communicate information through service users. Communication must be carried out according to the Hospital National Standard of Accreditation 1.1 in Indonesia (Commission of Hospital Accreditation, 2019). Communication and Education Management Chapter, Standard 1 Assessment elements 1, 2, and 3 (effective communication regulation toward community, patient, family, professional who give care service, and proof of implementation), Communication and Education Management Chapter 1.1 Assessment element 3 (hospital provides information about service, time, access and process to get the service), and Communication and Education Management Chapter 2 assessment 1,2, and 3 (available information about care and service are provided by hospital through website or brochure, this information also explain access to service that provided by hospital and information

for alternative care service in another health provider if hospital could not provide care service that patient need). According to these standards, the hospital could announce both websites or the hospital.

Besides that, nursing service needs to be modified in the clinical area. No wonder the clinical area had changes and alterations in its implementation (Gralton et al., 2020). The first necessary thing is a modification in nursing care, which number of staff and competency in that ward should be set according to the patient's condition (Aznavorian, 2020). The nursing manager could count nursing staff by Douglas, Gillies, or the Indonesia Health Ministry method, which uses patient criteria/hour amount of patient service in counting nurse staff demand. This formula could also be used for the COVID ward because patient criteria that could be hospitalised range from mild to severe symptoms, according to prevention and control guidelines of Corona Virus Fifth-Revised (Ministry of Health of Republic Indonesia, 2020). Reminding about the possibility of complications of COVID-19 that quite heavy, so nursing managers need to be careful in deciding the level of dependence and amount of patient service hours. Patient service hours could be counted by the time motion study method (Hariyati, 2014). The COVID-19 team should be divided into four shifts, each shift will be 6 hours long (Carenzo et al., 2020). Reduced working hours can reduce exposure to the risk of transmission from patients to nurses or vice versa. In addition, nurses have more time to rest. This is particularly for decreasing exposure risk and keeping nurse immunity to not tired.

Maintaining service quality and habits and adhering to nurses-related personal protection equipment is also important. This rule becomes important because all areas need screening, tests, physical distancing, and compulsory wearing of personal protection equipment (Gralton et al., 2020). Particularly nurses must strict in general and medical waste disposal management. This management plays an important role in ER for decreasing exposure risk of COVID-19 (Yang et al., 2021). Personal protection equipment regulation in every hospital also concerns nursing staff. If the hospital applies personal protection equipment standards by using hazmat and N95 mask for looking after COVID-19 patients for any intervention, so three shifts policy could not be applied. However, if the hospital only applies a

gown for every intervention and an N95 mask for aerosol intervention, the shifting policy will be used as usual. Furthermore, it is important to ensure that nurses who are doing self-isolation were fulfilled their basic needs. The hospital must provide nursing supplies during self-isolation by establishing a special team to handle this issue.

## Nursing Student

The COVID-19 crisis has a direct impact on nursing education, which is this education have a dilemma of continuing the study process and field practice to fulfilling competence target but coming along with health risk for student or withdrawing student from field practice (hospital or community health service) (Sheeren et al., 2020). However, if students do not do field practice, they will have a delay in completing their education. This could happen because of feeling worried the student will not be seen as competent if they complete education without completing the field practice (Dewart et al., 2020). A study in Korea showed before the COVID-19 pandemic, a student in South Korea decided to enrol in nursing school due to the high demand for nurse workers and high wages. However, during the pandemic, the student started to rethink that money they invest in education will not be worth it when they see the increased chance of COVID-19 exposure (Santos, 2020). Indonesia's nursing education system contains vocational, academic, and professional. For a professional degree, Ners (professional education) and Specialist nurse students are compulsory to do field practice for a year in health provider through 36 credits (Casman et al., 2020). Nursing students were worried after graduating. They are considered less competent. It makes them highly desirable to be involved in handling COVID-19, but the practice for nursing students should remain under supervision (Khumaidi et al., 2022). So, it becomes a severe concern for nursing education providers because closure in the health service provider becomes a practical placement for the student. This issue needs a proper solution.

Education providers have to make changes in learning methods. So nursing competence could be fulfilled with online methods during this pandemic. Learning media should be a concern during online sessions, so it will not be relied on video only (Konrad et al., 2021; Savitsky et al., 2020). Some methods could be applied to gaining online active learning,



such as expert opinion, case discussion, group work, role play, question and answer facilitated by a trainer and self-reflection (Konrad et al., 2021; Morin, 2020). Online learning should be interactive, with some strategies explained down below:

1. Case study: Case study implementation by student come with making a nursing care plan every week. Then facilitator could have a virtual discussion by using a question about Socratic dan Tanner's Clinical Judgment Model. These questions could be "What do you think about?"; "What do you observe from?"; "How do you interpret that data?"; "How do you make a priority?"; "How do you respond if ?" (Konrad et al., 2021; Morin, 2020).
2. Communication Practice: Communication skills that students should have through online learning have to be trained. So the student can communicate with nurses and other caregivers. One structured communication method is ISBAR (introduction, situation, background, assessment, recommendation). Online activities that could be provided are communication observation (for example, for right and wrong), practice among students with planned scenarios then evaluation by peers and facilitators/trainers (Konrad et al., 2021; Morin, 2020).
3. Video stimulation and scheduled laboratory practice minimising contact between students and facilitator. The Nursing Education Association in Indonesia needs to develop a nursing education curriculum based on the pandemic. This model showed nursing learning practice during the pandemic not only restrictions on the learning unit but also expects behaviour change for trainers and students in the study process that they usually do. This model will develop more innovative ways, like making the video for the practice module aimed at students' critical thinking skills and developing discussion and interaction for every learning unit through distance learning (Bezerra, 2020).

## CONCLUSION

The COVID-19 pandemic has made 42 health service closures in many provinces in Indonesia. All health service closures could have happened temporarily or totally. This condition has a bad effect on Indonesian nursing. For the patient, it impacts delay in providing service for the non-COVID patient. For the nurse, an increasing number of nurse staff confirmed COVID-19 positive. So, the gap ratio between nurse and patient became higher. Moreover, in nursing education, a nursing student going to do an internship will have trouble due to their closed practice area. Many efforts could be made to overcome this situation, such as decreasing the number of elective surgery schedule in hospitals, increasing bed capacity for COVID patients, recruiting contract nurses as a volunteer, optimising health services through telehealth concepts, and making innovation in online learning for nursing student

## Declaration of Interest

None

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## Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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