ORIGINAL ARTICLE

The Impact of Covid-19 Pandemic on Obstetrics & Gynaecology Specialist Training in Malaysia: Perception of Clinical Postgraduate Students

Ahmad Shuib Yahaya¹, Habibah Abdul Hamid¹, Nur Azurah Abdul Ghani², Mohd Nasri Awang Besar³

- ¹ Department of Obstetrics & Gynaecology, Faculty of Medicine & Health Sciences, Universiti Putra Malaysia, 43400 Serdang, Selangor
- ² Department of Obstetrics & Gynaecology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur
- ³ Department of Medical Education, Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur

ABSTRACT

Introduction: The COVID-19 pandemic that strucked the world had changed the global health system and caused changes in clinical practice and practitioners' exposure. The aim of this research is to study the perception of UKM Obstetrics and gynaecology postgraduate students about the impact of COVID-19 pandemic on their specialist training. Methods: The survey had been carried out through Google Form among students enrolled in Doctor of Obstetrics & Gynaecology (DROG) program in UKM and consist of three sections; socio-demographic information, changes in role during COVID-19 and perception towards training. Quantitative analysis performed using Statistical Package for the Social Sciences (SPSS). Results: Out of 47 respondents, 13 were working in MOH hospitals, 17 in UKM Hospital and 17 in both MOH and UKM hospitals. Total of 32 students (68.1%) felt increment in seeing obstetric patients and 31 students (65.9%) performed more obstetric procedures during COVID-19 pandemic. For gynaecology, 29 students (61.7%) claimed had been seeing less gynaecological patients and 40 students (85.1%) performed less gynaecological surgeries. Total of 35 students (74.5%) agreed that COVID-19 pandemic had affected their mental well-being and 42 students (89.4%) agreed their social well-being had been affected. Total of 43 trainees (91.5%) agreed that COVID-19 pandemic had negatively impacted their surgical skills in gynaecology and 38 students (80.1%) claimed their overall learning opportunities had been affected. Mean for training perception score is 52.53 and there is no significant difference in score mean among students according to difference in study year and training hospitals. Conclusion: COVID-19 pandemic had caused negative impact to the specialty training among Obstetrics & Gynaecology postgraduate students in UKM.

Malaysian Journal of Medicine and Health Sciences (2022) 18(14)44-53. doi:10.47836/mjmhs18.s14.6

Keywords: COVID-19, Postgraduate clinical training, Medical education, Obstetrics & gynaecology, Clinical teaching

Corresponding Author:

Ahmad Shuib Yahaya, M.Med Email: ahmadshuib@upm.edu.my Tel: +603-9769 2640

INTRODUCTION

First confirmed case of novel SARS-CoV2 (later named COVID-19 by WHO) in Malaysia was detected in 25th January 2020 involving a Chinese traveller entering the country from Singapore (1). Few waves of infection had been reported since then until the government declared Movement Control Order (MCO) on 18th March 2020 through implementation of Infectious Diseases

Prevention and Control Act 1988 (2). Third wave started in September 2020 until positive cases reached more than 1000 a day by end of October 2020. Third MCO had been announced in June 2021 when increment in daily cases occurred with increase of hospital and intensive care beds occupancy throughout the country. Ministry of Health (MOH) and other health facilities including university and private hospitals had taken actions in response to COVID-19 pandemic. Among the actions are human resource mobilization, additional employment of contract staffs, temporary interstate transfer of healthcare workers and internal redeployment to COVID-19 units. Changes of healthcare delivery include designating list of COVID hospitals, reduction in non-COVID services involving elective surgeries, specialist clinic appointment, temporary suspension of screening and preventive services in order to concentrate the resources to combat COVID-19 infection (3).

Education field is greatly affected by COVID-19 and implementation of MCO. Ministry of Higher Education (MOHE) had issued procedural instructions and guidelines for the conduct of higher education activities, in accordance to National Security Council's directives. Face-to-face classes being replaced by virtual ones using various platforms such as Google Meet, Google classroom, Zoom Meeting, Webex and others (4). These instructions leading to "new norms" in medical education had also affected postgraduate students enrolled in clinical master programmes of Malaysian public universities.

In Malaysia, there are currently four public universities under MOHE offering clinical master degree for obstetrics & gynaecology specialist training programme. The degrees are Doctor of Obstetrics & Gynaecology (DrOG) by Universiti Kebangsaan Malaysia (National University of Malaysia), Master of Obstetrics & Gynaecology (MOG) by University of Malaya and Master of Medicine (M.Med) offered by University of Science Malaysia and International Islamic University Malaysia. In Universiti Kebangsaan Malaysia (UKM) the programme is a minimum four years programme and students need to undergo clinical training in designated MOH hospitals and will serve as specialist registrars in university hospital for their final two years.

Drastic and rapid changes in the healthcare system, reduction in patients encounter and increase burden of COVID-19 management could affect trainees experience and training progression across various fields. Suspension of clinical service can lead to "clinical deskill" that may cause anxiety among specialist trainees (5). However, there is lack of studies to evaluate the impact of COVID-19 pandemic on clinical specialist training in Malaysia.

The objective of this research was to study the perception of UKM Obstetric and gynaecology postgraduate students about the impact of COVID-19 pandemic on their specialty training.

MATERIALS AND METHODS

A cross sectional survey was conducted among students enrolled in obstetrics & gynaecology clinical postgraduate programme (Doctor of O&G programme) at Universiti Kebangsaan Malaysia (UKM). The survey had been conducted from 20th December 2021 until 9th January 2022.

Population & Sampling

A total of 68 postgraduate students were registered for UKM DrOG programme in the academic year of 2020/2021. Census sampling method was used, hence sample size of 64 participants was needed, after excluding four respondents who were involved in pilot study. Inclusion criteria were registered students in UKM DrOG programme for academic year starting December 2020 and trainees who had just graduated in the end of semester one (May 2021). Those who did not consented to participate were excluded from the study. Invitation to participate in the survey was sent to the trainees through Email and WhatsApp messages. The informed consent was obtained prior to the survey.

Questionnaire

The instrument used in this study was a set of question naires on Google Form platform. The question naire comprised of three sections; sociodemographic data, changes in clinical role during COVID-19 pandemic and perception towards specialty training during COVID-19 pandemic. The third section was adapted from Mallick et al. (6) and permission to adapt was obtained. This section was designed to evaluate the perception of the trainees towards their specialty training, involving clinical experience, competency level in procedural skills, need to extend the training period and new things learnt during COVID-19 pandemic. The changes made to the adapted question naire were summarized in Table I.

Original items	A	Items in this study	
(Mallick et al.)	Adaptation description		
The COVID-19 pandemic has affected your physical wellbeing	Additional of one item: "social wellbeing"	The COVID-19 pandemic has affected your physical wellbeing	
The COVID-19 pandemic has affected your mental wellbeing	(manual day a manual second	The COVID-19 pandemic has affected your mental wellbeing	
	expert panel during validation process)	The COVID-19 pandemic has affected your social wellbeing	

Table I: Adaptation for section three of the questionnaire

CONTINUE

Table 1. Adaptation for section times of the questionnane (cont.	Tab	le I:	Ada	ptation	for	section	three	of the	questionnaire	(cont.
--	-----	-------	-----	---------	-----	---------	-------	--------	---------------	--------

Original items		Itoms in this study	
(Mallick et al.)	Adaptation description	items in this study	
COVID-19 has negatively affected your obstetric clinical training experience	Item on obstetric clinical training subdivid- ed into two:	COVID-19 has negatively affected your labour room procedural training experience	
	 Labour room procedure (manage- ment of birth and high risk cases in High dependency unit – in most Malaysian hospitals, HDUs are located in Labour Wards) 	COVID-19 has negatively affected your maternity surgeries training experience	
	 Maternity surgeries: Procedures in Maternity Operating Theater, includ- ing Caesarean sections 		
COVID-19 has negatively affected your ob- stetric antenatal training experience		COVID-19 has negatively affected your obstetric antenatal training experience	
COVID-19 has negatively affected your obstetric ultrasound experience	Additional of Gynaecological ultrasound.	COVID-19 has negatively affected your obstetric ultrasound experience	
	Justification: in Malaysia, most of the gynaecological scan being done by gynaecology doctors, rather than by Sonographer as in majority of cases in the UK.	COVID-19 has negatively affected your gynaecological ultrasound experience	
COVID-19 has negatively affected your gy- naecology outpatient training experience		COVID-19 has negatively affected your gynaecology outpatient training experience	
COVID-19 has negatively affected your emergency gynaecology surgical training experience	-added: "procedural"	COVID-19 has negatively affected your emergency gynaecology surgical and proce- dural training experience	
	Due to some of the minor surgeries such as Bartholin marsupialization and endo- metrial curettage might not be consid- ered "surgery" by some respondents		
COVID-19 has negatively affected your benign gynaecology surgical training expe- rience	"benign" changed to "elective"	COVID-19 has negatively affected your elective gynaecology surgical training experience	
My educational opportunities have been negatively affected by COVID-19		My educational opportunities have been negatively affected by COVID-19	
I am concerned about the impact of $COV(D_1)$ on my overall training	Training: Changed to "competency level"	I am concerned about the impact of	
	(for more specific meaning)	COVID-19 on my overall competency level	
COVID-19 will likely have a negative impact on my training progression/anticipated ARCP outcome	Adapted for UKM degree name (DrOG)	COVID-19 will likely have a negative im- pact on my DrOG assessment result	

Validation & Translation

Face validation was carried out in two phases; the first phase was among three researchers who were experts in Obstetrics & Gynaecology and Medical education and phase two was conducted during a research meeting with six lecturers of Medical Education Department, UKM. Writing style, language, grammatic structures and the clarity of the items were evaluated.

Subsequently section three of the questionnaires was subjected for content validation process. This validation was performed by calculating Content Validty Index (CVI) as described by Yusoff MSB (7). Four experts were involved in this validation process. Only items with CVI of at least 0.83 were included in this study (8).

This survey was conducted in Malay language and the items in the questionnaires were translated using forward and backward translation by two independent experts in English and Malay language.

Data analysis

Perception score was created for every respondent by creating an index from Likert-scale data of the 15 items in section three. Score of five given for strongly agree, four for agree, three for agree, two for disagree and one for strongly disagree. Total score was summed up from 15 items for each respondent. The index was created to change the data from nominal to interval prior to conducting parametric test for statistical analysis (9). ANOVA tests were done to analyse difference of the mean score among respondents according to their place of training and year of study.

Ethical Approval

This study had been approved by Research Ethics Committee of Universiti Kebangsaan Malaysia (JEPUKM) with project code FF-2021-468 in November 2021.

Pilot study

Pilot study was carried out with four respondents, which

involve one trainee representing each year of study. Feedback on item clarity and feasibility to conduct the online survey were obtained. Average time to complete the questionnaire was ten minutes.

RESULT

Demographic of the respondents

Total of 47 out of 68 trainees (70%) responded to the survey. Table II shows the sociodemographic data of the respondents.

Table II: Sociodemographic data of the respondents

Characteristic	Options	Respon- dents (n)	Percentage (%)
Gender	Female	38	80.9
	Male	9	19.1
Marital status	Married	35	74.5
	Single	12	25.5
Academic year	1	10	21.3
	2	5	10.6
	3	17	36.2
	4	11	23.4
	Passed May 2021	4	8.5
Training hospitals	MOH Hospitals	13	27.7
	НСТМ	17	36.2
	Both MOH + HCTM	17	36.2

Clinical role changes during COVID-19 pandemic

Four respondents (8.5%) had been temporarily deployed to COVID-19 special wards outside Obstetrics & gynaecology units. Total of 41 respondents (87.2%) have worked in special units in the department to manage COVID-19 patients among obstetric population. In term of workload, 39 trainees (83%) perceived increased workload during COVID-19 pandemic, four (8.5%) claimed unchanged workload and four (8.5%) felt their workload reduced.

Perception on clinical patients' encounter and procedural experience

Table III shows the respondents' perception on changes in number of patients seen during COVID-19 pandemic as compared to pre-pandemic period. The responses were divided into obstetrics and gynaecologic patients. Table IV shows their perception on changes in procedural and surgical experience. For obstetrics, it involves labour ward procedures including vaginal deliveries and maternity surgeries including caesarean deliveries.

(61.7%) 29 5 6 Reduced >75% 51 -**Gynaecological patients** 26 -50% 75% 25% No dif-ference (17.0%)ω (21.3%) 10 و C c Increased >75% cent-(Per-**Fotal** 1 – 25% 26 -50% 51 75% lge) 12.8%) 9 0 Reduced patients >75% 26 -50% 25% 75% | ____ 51 **Dbstetrical** No dif-ference (19.1%) 6 68.1%) 15 32 ŝ ω Increased >75% Total (Per-cent-25% 26 – 50% 75% age) | __ 5 (85.1%) 2 6 4 6 6 Reduced **Gynaecological Surgeries** >75% 26 -50% 51 – 75% 25% No dif-ference 4 (8.5%) (6.4%)0 \subset C Increased >75% Total (Percent-age) 51 -75% 50% 25% 26. (14.9%) Labour Room Experience & Mater-nity Surgeries 0 Reduced >75% 26 50% 75% 25% 5 (19.1%) No differ-ence (65.9%) 2 $\underline{\circ}$ Increased 31 pandemic >75% Total (Per-51 – 75% cent-26 – 50% 25% age)

Table IV: Perception on changes in procedural and surgical experience during COVID-19 Table III: Perception on changes in patients encounter during COVID-19 pandemic

Perception towards specialist training

Table V shows respondents' responses to 15 items in section three of the questionnaire. It summarizes their perception on specialist training aspects during COVID-19 pandemic. Total of agree and totally agree responses is summed up in the last column.



Fig.1: Histogram showing respondents' mean perception score towards specialist training

Table V: Perception on	specialist training	g aspects	during
COVID-19 pandemic	-		-

			Re	sponse	e (n)		
No	ltem (Ken- yataan)	1 Stro ngly Ag ree	2 Ag ree	3 Neu tral	4 Disa gree	5 Stro ngly Disa gree	Total Agree & Strong- ly AgreeN (%)
1	The COVID-19 pandemic has affected your physical wellbeing	6	22	9	8	2	28 (59.6%)
2	The COVID-19 pandemic has affected your mental wellbeing	8	27	7	4	1	35 (74.5%)
3	The COVID-19 pandemic has affected your social wellbeing	17	25	3	1	1	42 (89.4%)
4	COVID-19 has negatively affected your obstetric ante- natal training experience	4	19	15	9	0	23 (48.9%)
5	COVID-19 has negatively affected your labour room procedural training expe- rience	8	16	11	11	1	24 (51%)

Table V: Percep	tion on spe	ecialist tra	aining asp	ects during
COVID-19 pan	demic (con	t.)		

		Response (n)					
No	ltem (Ken- yataan)	1 Stro ngly Ag ree	2 Ag ree	3 Neu tral	4 Disa gree	5 Stro ngly Disa gree	Total Agree & Strongly AgreeN (%)
7	COVID-19 has negatively affected your obstetric ultrasound experience	3	15	14	13	2	18 (38.3%)
8	COVID-19 has negatively affected your gynaecologi- cal ultrasound experience	4	18	12	12	1	22 (46.8%)
9	COVID-19 has negatively affected your gynaecology outpatient training expe- rience	10	24	6	6	1	34 (72.3%)
10	COVID-19 has negatively affected your emergency gynaecology surgical and procedural training expe- rience	11	21	4	11	0	33 (70.2%)
11	COVID-19 has negative- ly affected your elective gynaecology surgical train- ing experi- ence	19	24	1	2	1	43 (91.5%)
12	My education- al opportuni- ties have been negatively affected by COVID-19	12	26	4	3	2	38 (80.1%)
13	l am con- cerned about the impact of COVID-19 on my overall competency level	7	25	3	8	4	32 (68.1%)
14	COVID-19 will likely have a nega- tive impact on my Clinical Master Degree assessment result	4	20	12	5	6	24 (51%)
15	If given a chance, I will choose to extend my training period due to COVID-19	1	3	18	11	14	4 (8.5%)

CONTINUE

Perception Score

Perception score was created for every respondent by creating an index from Likert-scale data of the 15 items in Table V. Mean score for all the respondents was 52.53 (SD=1.413). Fig.1 shows the histogram of perception score towards specialist training among the respondents. ANOVA analysis showed there was no significant difference in mean perception score among trainees in MOH hospitals (M=54.92, SD=9.16), UKM Hospital, HCTM (M = 50.00, SD = 10.093) and both hospitals (M= 53.24, SD = 9.647) with p-value of 0.368. Similarly for comparison among trainees in different years of study, there was no significant difference between first year trainees (M = 55.60, SD = 9.879), second year trainees (M = 56.40, SD = 8.649), third year trainees (M = 50.94), SD = 11.371), fourth year trainees (M = 50.64, SD = 8.346) and those who passed in May 2021 (M = 52.00, SD = 6.377) with p-value of 0.628.

Things learnt during COVID-19 pandemic

Table VI shows respondents' choices of things learnt by them throughout the pandemic period. All respondent had learned some new things during COVID-19 pandemic.

8		
New things learnt by the trainees during COVID-19 Pandemic ^a	Re- sponses, n	Percent- age (%)
No new things	0	0
Infectious control procedures and PPE ^b	42	89.4
Vaccination program and procedures	29	61.7
Nasopharyngeal swab techniques	39	83.0
Disaster management	14	29.8
COVID-19 clinical management	44	93.6
Management of Oxygen therapy	19	40.4
Leadership and team management	30	63.8
Others		
Management of COVID-19 in pregnancy	1	
arespondent can choose more than one item		

Table VI: New things learn	t during COVID-19 pandem	nic
----------------------------	--------------------------	-----

^arespondent can choose more than one iter ^bPPE: "*personal protective equipment*"

DISCUSSION

Changes in gynaecologic patients and procedures

There has been changes in work role and clinical exposure of the trainees during COVID-19 pandemic and the Movement Control Order (MCO) imposed by Malaysian government in response to it. Among the trainees, there was obvious difference in changes of the clinical exposure between obstetrics and gynaecology as evidence by their perception about number of patients seen and procedures being performed throughout the pandemic period. Majority of the trainees reported increment in number of obstetrics patients seen and procedures performed and reduction in gynaecological patients and procedures as shown in Table III and Table IV. This self-reported finding of reduction in gynaecological patients and procedures had also been reported by other studies in other regions of the world. A study among European trainees in 2021 showed 63% of 110 participants from 25 countries reported reduction in gynaecological patients up to 75% during COVID-19 surge as compared to before pandemic (10). However, the study did not reported changes in exposure to obstetrics patients and procedures. Another survey found reduction in surgeries being performed by gynaecological subspecialty trainees in United Kingdom, Unites States of America, Canada, Australia and Netherlands. In the study, 63 out of 126 trainees (50%) self-reported the reduction (11).

Reduction in number of gynaecologic patients being seen and treated happened due to reduction and postponement of specialist clinic services and elective surgeries during the pandemic, in response to increment of COVID-19 patient. The health facilities had shifted their resources to COVID-19 management. Hospitals under Ministry of Health and Universities had taken these measures as soon as MCO started in the country, especially the hospitals gazetted as COVID-19 hospitals. Hospital Sungai Buloh as the first COVID-19 hospital in Malaysia had implemented near-total closure of other services, except for very minimal obstetrics service, involving vaginal births and Caesarean sections since October 2020.

There had been several objective reports regarding reduction of clinical services in Malaysian health facilities as soon as MCO started in March 2020 (12,13). Non-COVID clinic appointments had been reduced and outpatient referral had been postponed except for emergency cases that required urgent intervention (14). Clinical departments across the country had taken the actions in accordance to directive by Ministry of Health issued on 24th March 2020 (15). Reduction and postponement of clinical services had also affected obstetrics and gynaecology services in Malaysian public hospitals (16).

Changes in obstetrics patients and procedures

Majority of the trainees reported they are managing more obstetrics patients and performing more obstetrics procedures during COVID-19 pandemic compared to before the pandemic. This finding had never been reported in other studies before. An Italian national survey involving 933 Obstetrics & Gynaecology trainees reported 43.3% of the respondents felt no changes in their maternity activities and the remaining trainees claimed reduction in the services (17). However, the survey did not put "increase" as one of the options in their questionnaire.

Number of obstetrics patients had increased in main government hospitals during COVID-19 pandemic. This was probably contributed by the restriction in travelling across district during MCO and reduction in obstetrics services provided by private health facilities during the peak of pandemic. In addition, most of private hospitals did not manage cases of COVID-19 positive and the affected mothers need to be transferred to government facilities designated to manage COVID-19 patients. Furthermore, antenatal services and birth were not categorized as "elective" services that need to be reduced in order to manage COVID-19 situation. As expected, during the peak period, the trainees in non-COVID hospitals were seeing more antenatal and parturient cases being diverted from areas covered by COVID hospitals, as obstetrical services being reduced to compensate COVID-19 management.

Perception towards specialist training

Majority (74.5%) of the trainees agreed that the COVID-19 pandemic had negatively affected their mental welbeeing. Survey in the UK by Mallick et al. also reported 77% f the trainees were affected (6). Another study had reported that doctors in obstetrics & gynaecology in the UK had higher risk to develop mental problems including depression and anxiety during COVID-19 pandemic. Among factors contributed to the mental problems includes the challenge to equiped themselves with updated clinical guide for COVID-19 management, fear of being infected during working, increase workloads and the concern of being deployed or transferred to other units due to COVID-19 situation (18).

Our trainees had reported negative effects in gynaecological training aspects. As shown by item 9, 10 and 11 in Table V, majority of the trainees agreed that COVID-19 situation had negatively affected their outpatient gynaecology training (72.3%), emergency gynaecological procedures training (70.2%) and gynaecological surgeries experience (91.5%). These findings are in accordance to the findings in Mallick's the survey, in which 93%, 84% and 99% trainees agreed to the three items in gynaecology experience respectively (6). The perception towards gynaecological training among specialist trainees is a global problem. Survey by Boekhorst et al.(10) found 67% of the trainees felt their surgical skills had reduced due to COVID-19 situation. Although an objective evaluation of COVID-19 pandemic to surgical skills and overal competencies of clinicians is difficult to be conducted, these self-reported perception findings need to be taken seriously. The problem of surgical competencies due to lack of real patients exposure might lead to serious consequences in the patients management and healthcare system in the future.

In contrast for obstetrics training, only half of our repondents agreed that their training affected by COVID-19 pandemic. Similarly in Mallick's survey, less than half of the trainees claimed that their obstetrics training had been negatively affected due to COVID-19

(6). The lesser effects to obstetrics training as perceived by the trainees probably due to the increment in patients being treated and maternity procedures being performed during this pandemic, as discussed earlier.

With regards to the trainees' perception about overal competencies and training opportunities, a high percentage (80%) of the trainees agreed that they have been negatively affected by COVID-19 pandemic. A Dutch survey done during early period of pandemic shown similar finding. 85.2% of their 317 surgical trainees felt their training affected by COVID-19 and their satisfaction score had reduced from 7.4 to 6.7 in April 2020 (19). With reduction in exposure to patients, this finding was expected. As other clinical field, the specialist training is very much dependant to patients' interactions, hands-on with real patients and exposure to real surgeries and procedures. Even though traditional didactic lecture and case based discussion can be replaced by virtual and online platforms (20), some of the skills in clinical specialist training such as clinical interaction, physical examination and surgical techniques are irreplaceable by educational technologies (21).

In our survey, most of the trainees concerned about their master programme assessment results. Both previous surveys by Mallick et al. (6) dan Boekhorst et al. (10) also reported the same finding, where almost 60% of trainees worried about their training assessments due to COVID-19 pandemic. Trainees from other fields i.e. plastic surgery (22) general surgery (19) dan Ophthalmology (23) also reported their concerns about achieving training objectives. There had been direct consequences of COVID-19 pandemic on exit examination for DrOG programme. Due to MCO, examinations for all clinical postgraduate programme had been postponed for six months from April-May 2020 to November 2020 in accordance to decision by National Medical Deans' Council (12). The examinations being done with modifications and following the standard operating procedures (SOP) set by National Security Council such as decentralization of exam centers, external examiners only from nearby universities or hospitals, virtual platform for certain sessions as viva and extra procedures for clinical patients including COVID-PCR swab test (24).

The last item in the questionnaires asked regarding their willingness to extend their training if given chance to do so. Interestingly, only four trainees agreed with the statement. Majority (53.2%) of them disagreed to extend their training due to COVID-19 pandemic. Despite they had agreed with many negative impacts to their training caused by COVID-19 pandemic, majority did not keen to prolonged their training period. This finding also contradicted with other prior studies in which 40% to 82% of specialist trainees from other fields agreed with the suggestion of training period extension (19,22,25).

Surveys in United Kingdom had reported majority of their surgical trainees will need to extend the specialist training due to COVID-19 pandemic situation (26) and majority of them actually prepared to do so (27).

In Malaysia, majority of clinical specialist trainees are sponsored by Federal Training Scholarships and they are given four years service leave to complete their training. This might be the reason that the trainees were not keen to extend their training period. Any extra semester for the training means they need to pay their own additional fees and will be not entitled for continuation of service leave. Furthermore, delay in graduation form specialist training program will lead to delay in their promotion and will affect pay scheme. After graduation, they will undergo a minimum period of six months working as junior specialists under supervision of consultants. They can utilize this period prior to the gazzetment as specialists to improve their surgical skills and clinical competencies.

Despite the negative impact on the majority of the trainees in COVID-19 pandemic MCO, there were some beneficial aspects. They learnt new things as shown in Table VI. Other previous studies had reported the same findings (10,28) and the trainees can use the knowledge and skills for their future works and management strategies.

CONCLUSION

There had been reduction in gynaecological patients' interaction and surgical exposure as perceived by UKM clinical specialist trainees during COVID-19 pandemic. This global issue had caused the trainees having difficulties to achieve learning and training objectives, especially related to clinical and surgical training.

COVID-19 Pandemic and Movement Control Order had caused negative impacts to overall clinical specialist training. The trainees perceived that this unprecedented situation had affected their emotional and social wellbeing and produced concern on their competency levels and training objectives. The problem affected gynaecology more prominently as compared to obstetrics.

It is important to encourage collaborative effort and synergetic actions between universities and health ministry in order to minimize negative impacts on specialist training aspects to the minimum. Discussions that lead to fruitful planning and implementation had to be done so that the national post-pandemic recovery plan will include the one to improve clinical training of various levels.

Limitations and Suggestion on further research This survey involved clinical master students in single specialty i.e. obstetrics and gynaecology in one of Malaysian universities; thus the results can not be generalized for all specialist trainees in the country. Further studies could be done involving other specialty programme in Malaysia and also among all obstetrics & gynaecology trainees in all four universities. Apart from clinical master students, specialist trainees in Malaysia also include medical officers in MOH hospitals enrolled into parallel pathways of training and individual candidates who are sitting for Membership of Royal College of Obstetricians & Gynaecologists (MRCOG) UK examinations. The questionnaires in our survey had been validated and can be used for larger studies involving all specialty trainees in obstetrics and gynaecology.

Another limitation of this study is the fact that it was a self-reported survey from the students, thus it is may not reflect the overal impact of COVID-19 towards the specialist training program. Objective audit of the number of patients and procedures performed before and during COVID-19 pandemic will be more representative to evaluate the effect of COVID-19 to the trainees exposure.

Opinion and perceptions of lecturers and consultants can be explored in order to evaluate overall training challenges, impact to trainees and training programme; and potential problems during COVID-19 pandemic. Another potential area to be studied is a more objective evaluation of the impact of COVID-19 pandemic to health system, patient safety and health service quality. This is because the main aim of specialty training programmes are to produce clinical specialists who will be leaders in healthcare system in the future.

Work burden, situational uncertainties surrounding healthcare system, training interruptions and concern of competency level are potential contributors to various psychological problems and can lead to burnout among clinical trainees. Further research need to be conducted to evaluate the effect of COVID-19 pandemic to mental health status and the impact to health professionals' work and wellbeing.

ACKNOWLEDGEMENTS

The authors thank the members of Medical Education Department and Obstetrics and Gynaecology Department, Faculty of Medicine, UKM for their advice and support to conduct this survey.

REFERENCES

- 1. Bernama (2020).Chronology of Covid-19 in Malaysia. Retrieved from: https://www. newsarawaktribune.com.my/chronology-of-covid-19-in-malaysia/ [Accessed 27/3/22]
- 2. Shah AU, Safri SN, Thevadas R, Noordin NK, Abd Rahman A, Sekawi Z, Ideris A, Sultan MT. COVID-19 outbreak in Malaysia: Actions taken by the Malaysian government. International Journal of

Infectious Diseases. 2020 Aug 1;97:108-16.https:// doi.org/10.1016/j.ijid.2020.05.093

- 3. Hashim JH, Adman MA, Hashim Z, Radi MF, Kwan SC. COVID-19 epidemic in Malaysia: epidemic progression, challenges, and response. Frontiers in public health. 2021;9.https://doi.org/10.3389/fpubh.2021.560592
- 4. Azman NO, Abdullah DO. A critical analysis of Malaysian Higher Education Institutions' response towards Covid-19: sustaining academic program delivery. Journal of Sustainability Science and Management. 2021 Jan;16(1):70-96.http://doi. org/10.46754/jssm.2021.01.008
- 5. Hoopes S, Pham T, Lindo FM, Antosh DD. Home surgical skill training resources for obstetrics and gynecology trainees during a pandemic. Obstetrics and gynecology. 2020 Jul 1.http://doi.org/10.1097/ AOG.000000000003931
- 6. Mallick R, Odejinmi F, Sideris M, Egbase E, Kaler M. The impact of COVID-19 on obstetrics and gynaecology trainees; how do we move on?. Facts, views & vision in ObGyn. 2021 Mar;13(1):9.http:// doi.org/10.52054/FVVO.13.1.004
- Yusoff MS. ABC of content validation and content validity index calculation. Resource. 2019 Jun 1;11(2):49-54.https://doi.org/10.21315/ eimj2019.11.2.6
- Polit DF, Beck CT, Owen SV. Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. Research in nursing & health. 2007 Aug;30(4):459-67.https://doi. org/10.1002/nur.20199
- 9. Boone HN, Boone DA. Analyzing likert data. Journal of extension. 2012 Apr 2;50(2):1-5.
- 10. Boekhorst F, Khattak H, Topcu EG, Horala A, Henriques MG. The influence of the COVID-19 outbreak on European trainees in obstetrics and gynaecology: a survey of the impact on training and trainee. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2021 Jun 1;261:52-8.https://doi.org/10.1016/j. ejogrb.2021.04.005
- 11. Gaba F, Blyuss O, Rodriguez I, Dilley J, Wan YL, Saiz A, Razumova Z, Zalewski K, Nikolova T, Selcuk I, Bizzarri N. Impact of SARS-CoV-2 on training and mental well-being of surgical gynecological oncology trainees. International Journal of Gynecologic Cancer. 2021 Sep 1;31(9). http://dx.doi.org/10.1136/ijgc-2021-002803
- Tay K, Kamarul T, Woo YL, Mansor M, Li X, Wong J, Saw A. COVID-19 in Singapore and Malaysia: rising to the challenges of orthopaedic practice in an evolving pandemic. Malaysian Orthopaedic Journal. 2020 Jul;14(2):7.https://doi.org/10.5704/ MOJ.2007.001
- 13. Ramasenderan N, Mohd Hussain MS, Halim AS. Impact of COVID-19 on Plastic and Reconstructive Surgery Practice—Comparing Malaysia and Other Asian Countries: A Preliminary Study. Asia Pacific

Journal of Public Health. 2021 Jul;33(5):657-9. https://doi.org/10.1177/10105395211014972

- 14. Khor V, Arunasalam A, Azli S, Khairul-Asri MG, Fahmy O. Experience from Malaysia during the COVID-19 movement control order. Urology. 2020 Jul 1;141:179-80.https://doi.org/10.1016/j. urology.2020.04.070
- Kader MI, Razak SS, Ramanna VR, Esa NK, Ahmad AR, Mohamad I. Challenges and Adaptation in Otorhinolaryngology Practice During Pandemic Lockdown: Experience from a Malaysian COVID-19 Hospital. The Malaysian journal of medical sciences: MJMS. 2021 Jun;28(3):143. https://doi.org/10.21315/mjms2021.28.3.13
- Syed Anwar Aly SA, Abdul Rahman R, Sharip S, Shah SA, Abdullah Mahdy Z, Kalok A. Pregnancy and COVID-19 pandemic perception in Malaysia: A cross-sectional study. International journal of environmental research and public health. 2021 Jan;18(11):5762.https://doi.org/10.3390/ ijerph18115762
- 17. Bitonti G, Palumbo AR, Gallo C, Rania E, Saccone G, De Vivo V, Zullo F, Di Carlo C, Venturella R. Being an obstetrics and gynaecology resident during the COVID-19: impact of the pandemic on the residency training program. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2020 Oct 1;253:48-51.https://doi.org/10.1016/j.ejogrb.2020.07.057
- Shah N, Raheem A, Sideris M, Velauthar L, Saeed F. Mental health amongst obstetrics and gynaecology doctors during the COVID-19 pandemic: results of a UK-wide study. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2020 Oct 1;253:90-4.https://doi.org/10.1016/j. ejogrb.2020.07.060
- 19. Poelmann FB, Ko*ë*ter T, Steinkamp PJ, Vriens MR, Verhoeven B, Kruijff S. The immediate impact of the coronavirus disease 2019 (COVID-19) pandemic on burn-out, work-engagement, and surgical training in the Netherlands. Surgery. 2021 Sep 1;170(3):719-26. https://doi.org/10.1016/j. surg.2021.02.061
- 20. Mian A, Khan S. Medical education during pandemics: a UK perspective. BMC medicine. 2020 Dec;18(1):1-2.https://doi.org/10.1186/ s12916-020-01577-y
- 21. Mehrotra D, Markus AF. Emerging simulation technologies in global craniofacial surgical training. Journal of Oral Biology and Craniofacial Research. 2021 Oct 1;11(4):486-99.https://doi. org/10.1016/j.jobcr.2021.06.002
- 22. Ibrahim N, Rich H, Ali S, Whitaker IS. The effect of COVID-19 on higher plastic surgery training in the UK: A national survey of impact and damage limitation. Journal of Plastic, Reconstructive & Aesthetic Surgery. 2021 Jul 1;74(7):1633-701. https://doi.org/10.1016/j.bjps.2021.02.002
- 23. Alahmadi AS, Alhatlan HM, Helayel HB,

Khandekar R, Al Habash A, Al-Shahwan S. Residents' perceived impact of COVID-19 on Saudi Ophthalmology Training Programs-a survey. Clinical Ophthalmology (Auckland, NZ). 2020;14:3755.https://doi.org/10.2147/OPTH. S283073

- 24. Che Lah, C.E., Mohamad, S., Mohamad I., Peperiksaan Klinikal Dalam Norma Baharu. Retrieved from: http://covid19.kk.usm.my/index. php/artikel/bacaan-umum/139-peperiksaanklinikal-dalam-norma-baharu. 25 July 2021. [Assessed 12/9/2021]
- 25. Huamanchumo-Suyon ME, Urrunaga-Pastor D, Ruiz-Perez PJ, Rodrigo-Gallardo PK, Toro-Huamanchumo CJ. Impact of the COVID-19 pandemic on general surgery residency program in Peru: a cross-sectional study. Annals of Medicine and Surgery. 2020 Dec 1;60:130-4.https://doi.org/10.1016/j.amsu.2020.10.031

- 26. English W, Vulliamy P, Banerjee S, Arya S. Surgical training during the COVID-19 pandemic–the cloud with a silver lining?. Journal of British Surgery. 2020 Aug;107(9):e343-4. https://doi.org/10.1002/bjs.11801
- 27. Clements JM, Burke J, Nally D, Rabie M, Kane E, Barlow E, Mohamed W, King M, McClymont L, George M, Tolofari S. COVID-19 impact on Surgical Training and Recovery Planning (COVID-STAR)-A cross-sectional observational study. International Journal of Surgery. 2021 Apr 1;88:105903.https:// doi.org/10.1016/j.ijsu.2021.105903
- 28. Chaudary M, Sasmal PK. A Surgical Resident's Perspective about COVID-19 Pandemic: Unique Experience and Lessons Learnt. International Journal of Medical Students. 2020 May 11;8(2):156-8. https://doi.org/10.5195/ijms.2020.546