

COVID-19 Pandemic and the Residents' Side of the Story: A Cross-sectional Survey Study

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Research Article

Keywords: COVID-19, resident, surgery, training program

Posted Date: December 28th, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-130913/v1>

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Version of Record: A version of this preprint was published at BMC Medical Education on April 13th, 2021. See the published version at <https://doi.org/10.1186/s12909-021-02655-2>.

Abstract

Background: Residency training programs have been impacted by the Coronavirus disease 2019 (COVID-19) pandemic. In this study we aim to investigate and evaluate the impact of the pandemic on residents as well as residency training programs.

Methods: A survey of 43 questions was prepared on Google forms and distributed among residents at a tertiary center in North Jordan in the period between October 30th and November 8th of 2020. The survey included questions that addressed the impact of the pandemic on residents' health as well as training programs. Our cohort was stratified according to the type of residency program (surgical residents (SRs) and non-surgical residents (NSRs)). Statistical methods included descriptive analysis, Chi-square or Fisher's exact test, and Mann Whitney U test. A two-sided p-value of ≤ 0.05 was considered statistically significant.

Results: Out of 430 residents in the institute, 255 (59%) residents responded to the survey. Participation rate among SRs was 74% (121/164) compared with 50% among NSRs (134/266). A total of 17 (7%) of residents reported being infected with COVID-19 and a significant difference was reported between SRs and NSRs (10% vs 4%, $P = 0.048$). Approximately, 106 (42%) reported a decrease in the number of staff working at the clinic and 164 (64%) reported limited access to personal protective equipment during the pandemic. NSRs were more likely to be trained to protect themselves and others against COVID-19 spread compared to SRs (57% vs 37% $P = 0.002$, 55% vs 41% $p = 0.026$ respectively)

Conclusion: The impact of COVID-19 pandemic on the workflow of residency training programs is very significant, thus institutes should modify their programs to fit residents' needs to maintain education without any compromise in their health status. Training healthcare workers should be given a priority in any healthcare-related crisis as they are the first line in combating such circumstances.

Background

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been identified in December 2019 in Wuhan, China as the cause of a highly contagious disease mainly affecting the respiratory system known as the coronavirus disease 2019 (COVID-19) (1, 2). The COVID-19 outbreak was declared as a pandemic by the World Health Organization (WHO) on March 11, 2020 (3).

In Jordan, the Ministry of Health confirmed the first COVID-19 case on March 2, 2020 (4). Upon confirming the first case of COVID-19 in Jordan, the government enforced national measures to limit the spread of the infection starting with activating defense laws which were followed by imposing a national curfew on March 21, 2020, and on March 15, 2020 mandatory quarantine for air travelers was imposed before completely shutting down the airport on March 17, 2020. The number of confirmed cases in Jordan since the beginning of the pandemic is 234,353 confirmed cases and 2960 deaths as of December 5, 2020 (5, 6).

Following the spread of the disease, all academic institutions have suspended on-campus teaching programs and shifted toward distant learning programs. In this regard, clinical training programs for medical students and residents have been dramatically affected as they require hands-on interaction with patients which originally takes place in healthcare facilities; mainly hospitals. In a recent study carried out in Saudi Arabia, an 84.6% reduction in training activities was reported in residency training programs (7). In our hospital, King Abdullah University Hospital (KAUH) which is the academic center affiliated with Jordan University of Science and Technology (JUST), the impact of the pandemic on residency training programs was further complicated due to the fact that KAUH was designated by the Jordanian Ministry of Health as the main center for treating COVID-19 patients and one of 7 centers performing PCR testing for suspected cases (8).

This in return, restricted the medical care provided by the hospital which was limited to only emergency admissions and major elective surgeries in the midst of COVID-19 cases surge in Jordan. Within these settings and as a result to the decrease in surgical and clinical practice, residents' training has been seriously affected. Evaluating and understanding this impact will definitely aid in better assessment of the gains and losses of such modified residency programs adopted in light of the ongoing pandemic. In this questionnaire-based cross-sectional study we aimed to study and evaluate the impact of the COVID-19 pandemic on the residents as well as residency training programs at KAUH.

Methods

Study design and sampling:

This is a single institution cross-sectional study, in which a self-administered online-based questionnaire was sent to all residents (n = 430) at King Abdullah University Hospital (KAUH). A convenience sampling technique was utilized in this study, as the form was distributed online to all KAUH residents. The questionnaire was set on Google forms. The inclusion criteria included any resident in training at KAUH during the COVID-19 pandemic period starting from 1st March 2020 till the time of the study.

The participants were then stratified into two groups, surgical residents group (SRs) which included ENT surgery, general surgery, neurosurgery, obstetrics & gynecology, ophthalmology, orthopedic, and urology residents, and a non-surgical residents group (NSRs) which included all other specialties.

Instrument Development And Data Collection:

The survey included 43 questions in English, investigating the impact of COVID-19 pandemic on residency training programs at KAUH in Irbid, Jordan. The questionnaire was initially validated by a group of experts to give their judgment about the clarity and comprehension of questions and evaluation of the survey structure. The questionnaire was piloted on 15 residents before a final version was developed and approved. Both closed and open-ended questions were included, of which 7 questions concerning resident's mental health had a four-point Likert format, and 4 questions that allowed more than one

answer. Questions addressed demographic data, training details before and during the pandemic, impact of the pandemic on residents whether related to their residency programs or to the health-related burden of the pandemic. This burden was assessed in terms of both direct impacts as in disease contraction (in residents and their close relatives or contacts) or indirect impact as in resulting mental health effects of the pandemic (depression symptoms, stress, anxiety).

Data collection was done during a period of 10 days between October 30th and November 8th of 2020, a follow up reminder was sent after four and seven days.

Statistical analysis:

Descriptive measures for categorical data included counts and proportions (%). Likert-scale data were considered as ordinal and were assigned scores, starting with “Never = 0” and ending with “Always = 3”, and thus were described as medians and IQRs. In addition, questions that allowed multiple answers were presented with bar charts as well.

Chi-square tests, or Fisher’s exact tests if one cell count was less than 5, were used to analyze associations between categorical data. While Likert-scale data were analyzed using Mann Whitney U tests for differences in distributions, and effect sizes (r statistics) were calculated for significant p-values, considering (0.10 - <0.30) as small effect, (0.30 - < 0.50) as a medium effect, and (≥ 0.50) as a large effect.

A two-sided p-value of ≤ 0.05 was considered statistically significant. The internal consistency of Likert-type questions related to mental health was measured using Cronbach’s alpha, and a minimum value of 0.7 was set as an acceptable level of reliability. All statistical analyses were calculated using Statistical Package for the Social Sciences (SPSS) version 26 (9). This study was done in accordance with the STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) guidelines (10).

Ethical Consideration:

This study was approved by Institutional Review Board (IRB) at Jordan University of Science and Technology (105/136/2020). In addition, informed consent was obtained from all participants.

Results

A. General demographics:

255 (59%) residents of the total 430 in the institute responded to the survey. Specifically, participation rate among SRs was 74% (121/164) compared with 50% among NSRs (134/266). Full details of participation rates per individual residency programs are provided in table 1

Of the participants 123 (48.2%) were males, with a most common age range of 24-27 years (62%), 90 (35.3%) were first year residents, 134 (52.5%) non-surgical residents and 121 (47.5%) were surgical residents.

B. The effect of the pandemic on the clinical settings and teaching programs:

When comparing changes in the clinical settings between surgical and non-surgical programs, the proportion of NSRs reporting lock-down of the clinic sometimes was significantly higher than the SRs group (42.5% vs 26.4%, respectively; $p = .007$). Similarly, the proportion reporting a decrease in the staff working in the clinic (52.2% vs 29.8%; $p < .001$), the proportion reporting limited personal protective equipment (PPE) (71.6% vs 56.2%; $p = .01$), and the proportion reporting a delay in patients' visitation to the clinic or emergency department due to fear of getting infected (57.5% vs 39.7%; $p = .005$) was higher among non-surgical residents. A significant difference was also detected in the effect on the number of on-call duties per month ($p < .0001$), with the most common answer in both groups being a "no change" (50.7% and 64.5%, respectively), while the second most common answer was an "increase" for the NSRs group (35.8% vs 11.6%), and a "decrease" for the SRs group (24% vs 13.4%).

As for the effect on the teaching programs, the proportion of NSRs reporting a shift toward online learning was significantly higher than that of the SRs group (53% vs 30.1%; $p < .001$).

And finally, the proportion of NSRs reporting participating in nasopharyngeal swab sampling for patients was also significantly higher than that of the SRs group (67.1% vs 34.7%; $p < .0001$).

Comparisons are provided in Table 2, figure A and B.

C. The effect of the pandemic on residents' personal life and mental health:

First of all, a significant difference in gender between the two groups was detected, with the NSRs group having a higher proportion of females (60% vs 43.8%; $p = .016$).

When comparing the effect of the pandemic on the personal life of residents between the both groups, the proportion of residents reporting getting infected by COVID-19 was significantly higher in the SRs group (9.9% vs 3.7%; $p = .048$). In addition, 113 (84%) residents in the NSRs group, and 98 (81%) residents in the SRs group reported a direct contact with COVID-19 cases. A statistically significant difference was found when they were asked about their relation to those infected people (patients, a co-worker, or both) ($p = .020$), with the most common answer in both groups being "both" (66.4% and 49%), while the second most common answer was "patients" (20.4% and 24.5%), and "co-workers" (26.5% and 13.3%).

When asked about being updated about this pandemic protocol, a significant difference was also found ($p = .004$), with the most common answer in the NSRs group being "yes" (59% vs 38% , and the most common answer in the SRs group being "Not always" (44.6% vs 30.6%), while the remaining in both groups account for the "No" answer (10.4% vs 17.4%). In addition, the proportion of residents who reported being trained to protect themselves against the virus spread was significantly higher in the NSRs

group (56.7% vs 37.2%; $p = .002$). Similarly, the proportion of residents who reported being trained to protect others against the virus spread (54.5% vs 40.5%; $p = .026$) was also significantly higher in the NSRs group.

Regarding the effect on the residents' mental health, when testing the internal consistency of the Likert-type questions addressing mental health, a Cronbach's alpha of .802 (Good) was found.

When asked about feeling anxious about the pandemic based on a 4-point Likert scale, the median was 2 (2-3 IQR) in the NSRs group, vs 2 (1-2 IQR) in the SRs group, and the distribution of the two groups differed significantly ($p = .044$), but on the other hand the effect size was found to be small ($r = 0.13$). In addition, the proportion of residents who reported feeling anxious about an inadequacy of protective equipment in the work area was significantly greater in the NSRs group (90.3% vs 75.2%; $p = .001$), as well as the proportion of residents who reported feeling increased stress and anxiety between colleagues being also significantly higher in the NSRs group (88.1% vs 76%; $p = .012$)

As for the fear of getting infected, when asked on the 4-point Likert scale, the median was 2 (1-3 IQR) in the NSRs group, vs 2 (1-2 IQR) in the SRs group, and the distribution of the two groups differed significantly as well ($p = .049$), however the effect size was found to be small ($r = 0.123$)

Comparisons are found in Table 3 and figure C.

D. Effect of the pandemic on the surgical training program:

When SRs were asked about a reduction in the number of elective surgeries, 63 (52.1%) provided a positive answer.

In addition, in a multiple-selection question, 84 (69.4%) reported a decreased in the number of surgical cases they can participate and practice on, 43 (35.5%) reported a decrease in contact with the consultants, 62 (51.2%) reported a decrease in teaching sessions, and finally 16 (13.2%) had an answer of "none of the above". Results are presented in Figure D.

Discussion

This study presents a comprehensive insight on the burden of the ongoing COVID-19 pandemic on the residents' health and the workflow of residency training programs at a major tertiary hospital in North Jordan.

The results of this survey study indicate the crucial restraints the pandemic had on residency programs at KAUH. In this regard, the closure of outpatient clinics as well as the delay of most elective and non-urgent surgical and medical procedures had significantly reduced residents' clinical interaction. Farid et al. reported a 86.3% reduction in global surgical activity in a surgery department at Belgium (11).

On the other side, positive outcomes of the current crises are also worth mentioning and they include the implementation of effective distant learning methods such as online seminars, recorded or live-streamed didactic lectures as well as the introduction of telemedicine in a comforting and efficient method to the patients and healthcare providers. Overall, most of these online-based methods will transcend beyond the pandemic as they have proven to be effective time-efficient tools in education and in some instances in health-related services as well (12–14).

In order to further understand the effect of the current exceptional circumstances, our sample of 255 residents was stratified according to the nature of the residency program; 121 surgical residents (SRs) accounting for 47.4% and 134 non-surgical residents (NSRs) accounting for 52.6% as residents in surgical programs undergo a more hands-on approach in the day-to-day practice and it is established that COVID-19 is more likely to spread in close human interactions (15). When considering the effect of the pandemic on the clinical settings, “limited Personal Protective Equipment” was the most frequent complaint in our cohort followed by “the decrease in the number of staff working at the clinic”. In both instances, NSRs more frequently reported these complaints (72% vs 56% and 52% vs 30%, respectively). This could be explained by the increased COVID-19 related workload on NSRs as they interact more with COVID-19 patients upon ICU or inpatient admission. This is further highlighted by the significantly increased number of on call duties per month as well as the participation in nasopharyngeal swab sampling for patients in the NSRs cohort relative to SRs.

In our cohort 48% of residents were trained on how to protect themselves against COVID-19 spread and 48% were trained on how to protect others, this is similar to what was reported in a similar Saudi study in which 43.8% of residents had enough training for the proper use of personal protective equipment (7). This study also reported that 7 participants out of 240 (2.9%) responders were infected with COVID-19 which is lower than what we have reported (17 infected residents out of 255 responders (6.6%)). Yet, it is worth noting that the time span of both studies is different; Balhareth et al. collected responses in the period between April 23rd and May 6th 2020 and Saudi Arabia had a total of 31938 cases by May 6th 2020 whereas responses’ collection in our study was done between October 30th and November 8th 2020 and Jordan had a total of 109321 cases by November 8th as there was a surge in cases in that period (5, 7, 16).

Interestingly in our cohort, SRs were infected by COVID-19 more frequently than NSRs (10% vs 4%, $P = .048$) which could appear to be counter intuitive for a moment since NSRs are more frequently to interact with COVID-19 patients. However, we believe the psychological aspect of cautious practice in this scenario plays a crucial role, since SRs could underestimate the importance of key protective measures due to out-of-place ease when interacting with surgical patients when in fact those patients need more caution since they can be asymptomatic or silent COVID-19 patients. This difference could also be explained by the higher percentage of NSRs being both “updated with the pandemic protocol” (Answered Yes: 59% vs 38%) and “trained on how to protect themselves against COVID-19 spread” (57% vs 37%, $p = 0.002$). This again highlights a potential worrying cascade of events that starts with the frontline

involvement of COVID-19 care being non-surgical healthcare personnel and as a result surgery-related healthcare workers will be less updated and perhaps less aware of the essential protective measures.

The more active role of NSRs in our cohort is in return reflected on the mental status of residents, as NSRs have answered question number 20 “Being anxious about the pandemic” with “Always” more frequently than SRs (29% vs 18%). In this regard, question number 22 “being anxious about an inadequacy of protective equipment in work ” and question number 23 “Increased stress and anxiety between colleagues” confirm this conclusion, since a significant difference was observed in the percentage of (Yes) answers in both questions (90% vs 75%, $p = 0.001$ and 88% vs 76%, $p = 0.012$, respectively). Aljehani et al. reported a 50% rate of positive scores among general surgery residents in the screening tool of generalized anxiety disorder (GAD) during the current pandemic (17). Considering these alarming high percentages of stress and anxiety among residents specifically and healthcare workers generally, increased institutional efforts should be invested in approaching this burden to avoid further exacerbation of this issue. Suggested measures to manage this problem include providing counseling sessions, anonymous crisis hotlines and holding seminars on effective stress coping mechanisms (18).

The main limitation in our study is the limited generalizability of the results due to the implementation of the study on a single tertiary hospital in the North of Jordan that was allocated to be one of a few COVID-19 testing and admission centers. National multi-center studies involving larger samples are still needed to confirm these findings on a large scale. In addition, the study design based on data collection by an online survey questionnaire might contribute to response bias that could not be managed and controlled adequately.

Conclusion

The impact of COVID-19 pandemic on the workflow of residency training programs is very significant, and as a result program director should modify their programs to fit residents’ needs in the most appropriate way to maintain education without any compromise in their health status. In addition, residents and healthcare workers should be given a priority in any healthcare-related crisis as they are the first line fighters in such exceptional circumstances.

Declarations

Ethics approval and consent to participate

This study was approved by Institutional Review Board (IRB) at Jordan University of Science and Technology (105/136/2020). In addition, informed consent was obtained from all participants.

Consent for publication

“Not applicable”

Availability of data and materials

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

Competing interests

"The authors declare that they have no competing interests"

Funding

none

Authors' contributions

All authors made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; agreed to submit to the current journal; gave final approval of the version to be published; and agree to be accountable for all aspects of the work

Acknowledgements

"Not applicable"

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Tables

Table 1 : Residents participation.

		Total	Responded (%)
Over-all		430	255 (59)
General specialty	Surgical	164	121(74)
	Non-surgical	266	134 (50)
Detailed Specialty	Anesthesia	34	12(35)
	Dermatology	13	9 (69)
	Emergency medicine	18	2 (11)
	ENT surgery	11	11 (100)
	Family medicine	40	32 (80)
	General Surgery	59	44 (75)
	Internal medicine	59	37 (63)
	Neuromedicine	21	3 (14)
	Neurosurgery	9	5 (56)
	Obstetrics & Gynecology	39	38 (97)
	Ophthalmology	20	9 (45)
	Orthopedic	14	9 (64)
	Pathology	13	3 (23)
	Pediatric	24	21 (88)
	Psychiatry	10	4 (40)
	Radiology	34	11 (32)
Urology	12	5 (42)	

Table 2 : General demographics.

		Frequency	%
Gender	Male	123	48.2
	Female	132	51.8
Age	24-27	158	62.0
	28-31	75	29.4
	Older than 31	22	8.6
Marital Status	Single	167	65.5
	Married	88	34.5
Year of residency	first year	90	35.3
	second year	58	22.7
	third year	52	20.4
	fourth/fifth year	55	21.6
Specialty	Anesthetist and ICU doctor	12	4.8
	Dermatology resident	9	3.5
	Emergency Doctor	2	0.8
	Ent resident	11	4.3
	Family medicine resident	32	12.5
	General Surgery resident	44	17.3
	Internal medicine resident	37	14.5
	Neuromedicine resident	3	1.2
	Neurosurgery resident	5	2.0
	Obstetrics & Gynecology resident	38	14.9
	Ophthalmology resident	9	3.5
	Orthopedic resident	9	3.5
	Pathology resident	3	1.2
	Pediatric resident	21	8.2
	Psychiatry resident	4	1.6
Radiology resident	11	4.3	
Urology resident	5	2.0	

Surgery vs Non-surgery	Non-surgical residents	134	52.5
	Surgical residents	121	47.5

Table 3: The effect on the clinical settings and teaching programs.

		Total (%)	Non-surgical residents (%)	Surgical residents (%)	P-value
Year of residency	First year	90 (35)	50 (37)	40 (33)	.108
	Second year	58 (23)	32 (24)	26 (22)	
	Third year	52 (20)	31 (23)	21 (17)	
	Fourth/fifth year	55 (22)	21 (16)	34 (28)	
(1) Effect of the pandemic on the clinic: (yes)					
Lock-down of the clinic sometimes		89 (35)	57 (43)	32 (26)	.007
Decrease in the number of patients per day		96 (38)	45 (34)	51 (42)	.159
Decrease in the number of staff working at the clinic		106 (42)	70 (52)	36 (30)	<.001
Limited personal protective equipment		164 (64)	96 (72)	68 (56)	.010
None of the above		23 (9)	12 (9)	11 (9)	.970
(2) Effect on number of on calls per month	Decreased.	47 (19)	18 (13)	29 (24)	<.0001
	Has not changed	146 (57)	68 (51)	78 (65)	
	Increased	62 (24)	48 (36)	14 (12)	
(3) Noticing a delay in patients' visitations to clinics or emergency departments due to patients' fear from getting infected by COVID-19		125 (49)	77 (58)	48 (40)	.005
(4) Do you think non-COVID patients were negatively affected during the pandemic?		227 (89)	124 (93)	103 (85)	.059
(5) Noticing a decrease in the number of admissions during the pandemic		114 (45)	56 (42)	58 (48)	.325

(6) The number of staff working in your department during the pandemic has:	Decreased	121 (48)	68 (51)	53 (44)	.311
	Not changed	125 (49)	60 (45)	65 (54)	
	Increased	9 (3)	6 (5)	3 (3)	
(7) Effect of the pandemic on the teaching program: (yes)					
Less numbers of rounds		94 (37)	47 (35)	47 (39)	.533
Less numbers of lectures & seminars		183 (72)	100 (75)	83 (69)	.285
Shifting to online learning/meeting		108 (42)	71 (53)	37 (31)	<.001
Less numbers of grand rounds/lectures		115 (45)	68 (51)	47 (39)	.056
None of the above		12 (5)	8 (6)	4 (3)	.316
(8) COVID-19 positive cases in the department/ward	Yes	211 (83)	105 (78)	106 (88)	.051
(9) Participating in Nasopharyngeal swab sampling for patients	Yes	132 (52)	90 (67)	42 (35)	<.0001

Table 4 : The effect on personal life and mental health.

		Total (%)	Non-surgical residents (%)	Surgical residents (%)	P-value
Gender	Male	123 (48)	55 (41)	68 (56)	.016
	Female	132 (52)	79 (59)	53 (44)	
(10) Isolation due to contact with COVID-19 positive cases	No	193 (76)	107 (80)	86 (71)	.186
	Yes, I took less than a week off	40 (16)	19 (14)	21 (17)	
	Yes, I took a week or more off	22 (8)	8 (6)	14 (12)	
(11) Number of getting personal screening or a diagnostic swab for COVID-19	Zero	75 (29)	38 (28)	37 (31)	.916
	Once	91 (36)	48 (36)	43 (35)	
	More than once	89 (35)	48 (36)	41 (34)	
(12) Getting infected by COVID-19	Yes	17 (7)	5 (4)	12 (10)	.048
(13) If yes, were you diagnosed by showing first:	Symptoms	10 (59)	3 (60)	7 (58)	1.00
	Positive swab	7 (41)	2 (40)	5 (42)	
(14) Having a direct contact with COVID-19 positive cases	Yes	211 (83)	113 (84)	98 (81)	.481
(15) If yes, were they co-workers or patients?	Patients	47 (22)	23 (21)	24 (25)	.020
	Co-workers	41 (20)	15 (13)	26 (26)	
	Both	123 (58)	75 (66)	48 (49)	
(16) Being updated about this pandemic protocol	Yes	125 (49)	79 (59)	46 (38)	.004

	Not always	95 (37)	41 (31)	54 (45)	
	No	35 (14)	14 (10)	21 (17)	
(17) Changing the work area inside or outside the hospital due to Corona Pandemic Protocol	Yes	85 (33)	44 (33)	41 (34)	.859
(18) Being trained on how to protect self against COVID-19 Spread	Yes	121 (48)	76 (57)	45 (37)	.002
(19) Being trained on how to protect others against COVID-19 Spread	Yes	122 (48)	73 (55)	49 (41)	.026
(20) Being anxious about the pandemic	Median (IQR)	2 (2-2)	2 (2-3)	2 (1-2)	.044*
	Always	61 (24)	39 (29)	22 (18)	
	Most of the time	133 (52)	67 (50)	66 (54)	
	Rarely	56 (22)	26 (19)	30 (25)	
	Never	5 (2)	2 (2)	3 (3)	
(21) Having adequate personal protective equipment in the work area for Corona Pandemic	Yes	65 (26)	27 (20)	38 (31)	.117
	Not always	98 (38)	56 (42)	42 (35)	
	No	92 (36)	51 (38)	41 (34)	
(22) Being anxious about an inadequacy of protective equipment in the work area	Yes	212 (83)	121 (90)	91 (75)	.001
(23) Increased stress and anxiety between colleagues	Yes	210 (82)	118 (88)	92 (76)	.012
(24) Complaining from Depression symptoms due to the Pandemic	Median	1 (1-2)	2 (1-2)	1 (1-2)	.055*
	Always	36 (14)	17 (13)	19 (16)	
	Most of the time	89 (35)	61 (45)	28 (23)	
	Rarely	82 (32)	33 (25)	49 (40)	
	Never	48	23 (17)	25 (21)	

			(19)			
(25)	Fear of getting infected	Median (IQR)	2 (1-3)	2 (1-3)	2 (1-2)	.049*
		Always	79 (31)	52 (39)	27 (22)	
		Most of the time	102 (40)	45 (33)	57 (47)	
		Rarely	59 (23)	29 (22)	30 (25)	
		Never	15 (6)	8 (6)	7 (6)	
(26)	Fear of death due to the pandemic	Median (IQR)	1 (1-2)	1 (1-2)	1 (1-2)	.341*
		Always	43 (17)	26 (19)	17 (14)	
		Most of the time	71 (28)	39 (29)	32 (26)	
		Rarely	106 (41)	49 (37)	57 (47)	
		Never	35 (14)	20 (15)	15 (13)	
(27)	Number of family members living in the same house	Zero	29 (11)	11 (8)	18 (15)	.104
		One	22 (9)	10 (8)	12 (10)	
		Two	25 (10)	18 (13)	7 (6)	
		Three	35 (14)	16 (12)	19 (15)	
		Four or more	144 (56)	79 (59)	65 (54)	
(28)	If yes, does family members in the previous question include seniors (older than 60 years old members)	Yes	120 (53)	67 (55)	53 (52)	.651
(29)	One of the family members getting infected	Yes	28 (12)	20 (16)	8 (8)	.054
(30)	Feeling guilty or fear of spreading COVID-19 from your work area to family members?	Median (IQR)	3 (2-3)	3 (3-3)	3 (2-3)	.077*
		Always	180 (70)	101 (75)	79 (65)	

	Most of the time	46 (18)	20 (15)	26 (22)	
	Rarely	12 (5)	7 (5)	5 (4)	
	Never	17 (7)	6 (5)	11 (9)	
(31) Feeling safe during the pandemic	Median (IQR)	1 (0-1)	1 (0-1)	1 (0-1)	.546*
	Always	6 (2)	2 (2)	4 (3)	
	Most of the time	23 (9)	9 (7)	14 (12)	
	Rarely	114 (45)	64 (47)	50 (41)	
	Never	112 (44)	59 (44)	53 (44)	
(32) Feeling that family members are safe during the pandemic	Median (IQR)	1 (0-1)	1 (0-1)	1 (0-1)	.108*
	Always	2 (1)	1 (1)	1 (1)	
	Most of the time	25 (11)	10 (8)	15 (14)	
	Rarely	96 (43)	51 (41)	45 (44)	
	Never	103 (46)	61 (50)	42 (41)	
(33) Staying away from the family in order to protect them	Yes	189 (74)	105 (78)	84 (69)	.104
(34) Changing or considering changing your specialty in order to protect yourself or your family from COVID-19	Yes	38 (15)	19 (14)	19 (16)	.733
(35) Decreased available time for other activities outside the hospital	Median (IQR)	2 (2-3)	2 (2-3)	2 (2-3)	.504*
	Always	115 (45)	60 (46)	55 (45)	
	Most of the time	110 (43)	64 (38)	46 (43)	
	Rarely	23 (9)	8 (12)	15 (9)	
	Never	7 (3)	2 (4)	5 (3)	

(36)	Missing an event/activity due to COVID-19 Pandemic	Yes	243 (95)	128 (96)	115 (95)	.856
(37)	Facing any limitations in coming to work because of the Lock-down	Yes	142 (56)	77 (58)	65 (54)	.548
(38)	Other work-related effects of the lock-down (yes)					
	Absences from work		35 (14)	19 (14)	16 (13)	.825
	Delay in arriving to the work		86 (34)	47 (35)	39 (32)	.632
	Delay in leaving your work		98 (38)	53 (40)	45 (37)	.699
	More responsibilities at work		163 (64)	91 (68)	72 (60)	.163
	None of the above		41 (16)	19 (14)	22 (18)	.385

P*: P-values were computed using the Mann Whitney U test.

Figures

Figure A. Effect of the pandemic on the clinic

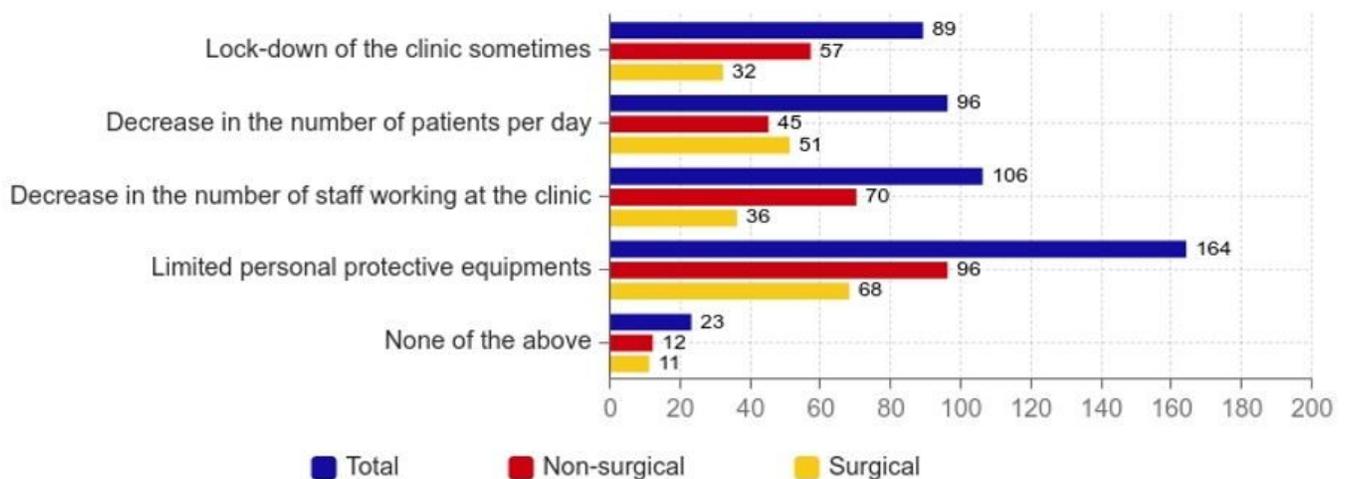


Figure 1

Effect of the pandemic on the clinic

Figure B. Effect of the pandemic on the teaching program

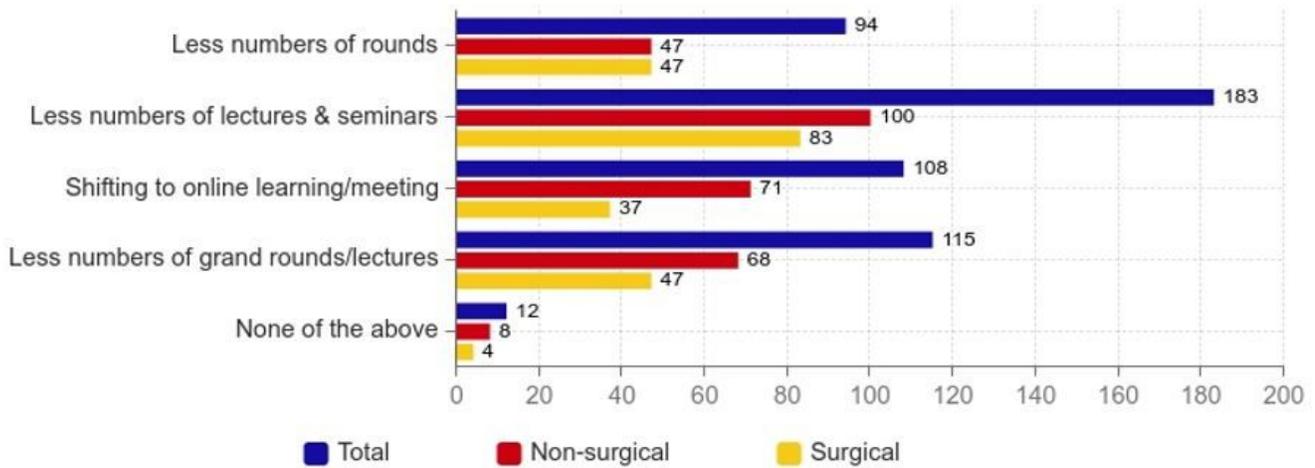


Figure 2

Effect of the pandemic on the teaching program

Figure C. Other work-related effects of the pandemic

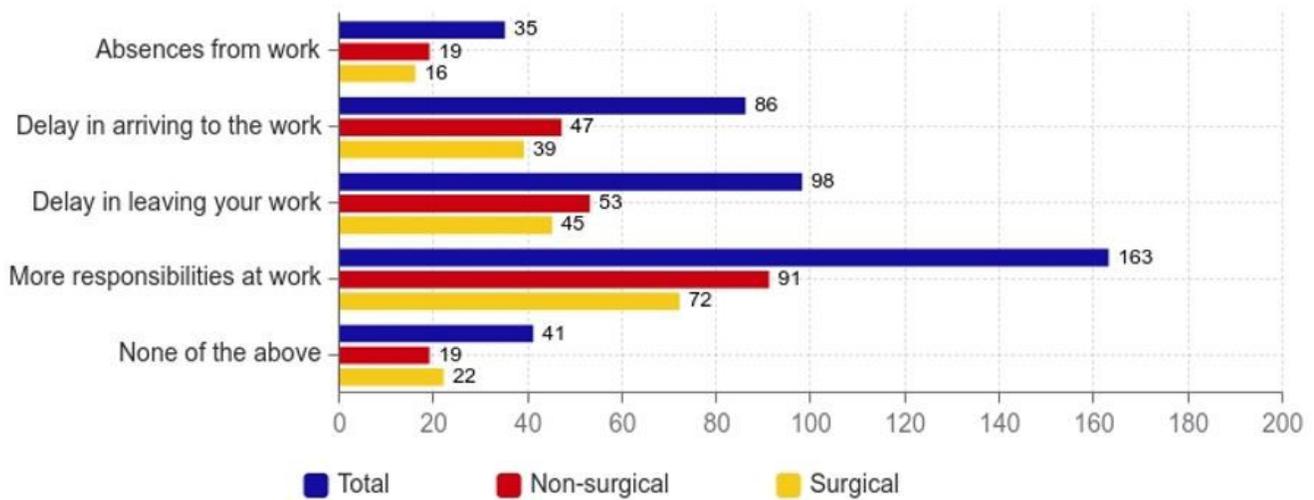


Figure 3

Other work-related effects of the pandemic

Figure D. Effect of the pandemic on surgical teaching program

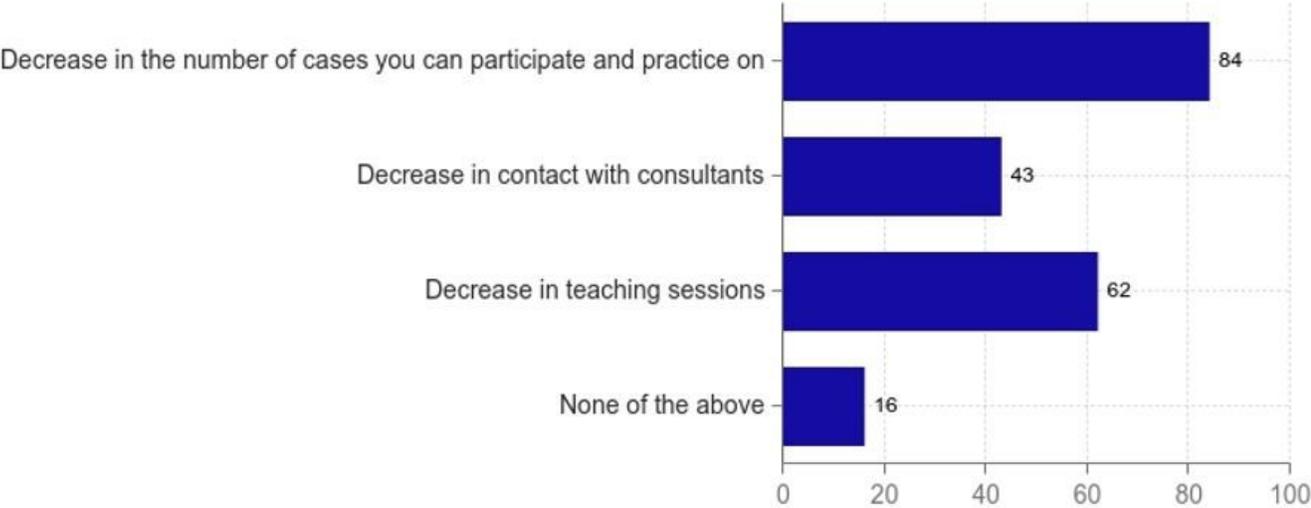


Figure 4

Effect of the pandemic on surgical teaching program