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The Impact of Coronavirus Disease 2019 on Maxillofacial Surgery Training in Portugal: The Resident's Perspective

Pedro Gomes de Oliveira^a; Cátia Mateus^a; João Barros^b; Eduardo Ventura^c; José Soares^d; Helena Rodrigues^e; Paulo Valejo Coelho^{a,e}

a – Department of Maxillofacial Surgery, Centro Hospitalar de Lisboa Central, R. José António Serrano, 1150-199 Lisboa, PORTUGAL

b – Department of Maxillofacial Surgery, Centro Hospitalar e Universitário de Coimbra, Praceta Prof. Mota Pinto, 3004-561 Coimbra, PORTUGAL

c – Department of Maxillofacial Surgery, Centro Hospitalar Universitário do Porto, Largo Prof. Abel Salazar, 4099-001 Porto, PORTUGAL

d – Department of Maxillofacial Surgery, Centro Hospitalar Universitário de São João, Alameda Prof. Hernâni Monteiro, 4200-319 Porto, PORTUGAL

e – NOVA Medical School | Faculdade de Ciências Médicas, NOVA University of Lisbon, Campo Mártires da Pátria, 130, 1169-056 Lisboa, PORTUGAL

Corresponding Author:

Pedro Gomes de Oliveira

Serviço de Cirurgia Maxilofacial, Centro Hospitalar Universitário de Lisboa Central

R. José António Serrano, 1150-199, Lisboa, Portugal

pedro.oliveira@chlc.min-saude.pt

The Impact of Coronavirus Disease 2019 on Maxillofacial Surgery Training in Portugal: The Resident's Perspective

SUMMARY:

Introduction: The COVID-19 pandemic has forced Portuguese healthcare institutions to adapt management protocols and prioritize resources. These adjustments had a significant impact, affecting both clinical care and also training programs. The aim of this study was to assess the maxillofacial surgery resident's perspective on the pandemic's impact on specialty training.

Methods: We designed a nationwide questionnaire to evaluate surgical activity of maxillofacial surgery residents, the impact on surgical training and the perceived effect on their future.

Results: We collected results of all maxillofacial surgery residents currently in training. Three out of 32 reported a decline in surgical activity of 90-100%, 11 stated a reduction of 75%, 12 expressed a decrease of 50% and 6 described a decline of 25%.

Discussion: The majority of residents stated the need to consider an extension of training time. Alternative training tools such as virtual activities and simulation training should be considered as formal complements to residency programs.

Conclusion: We found a significant decrease in surgical activity among all trainees coupled with a unanimous concern regarding their training progression.

Keywords:

Coronavirus; COVID-19; Internship and Residency; Maxillofacial Surgery; Pandemics; Portugal

INTRODUCTION

The novel coronavirus, later named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was first identified in China (Zhu et al., 2020). The infection spread rapidly worldwide, which led the World Health Organization to declare it a pandemic on March 11th 2020 (World Health Organization, 2020). In Portugal, the rising number of infected patients and its impact on society led to the declaration of a “State of Emergency” between March 18th and April 17th 2020 and the issue of a nationwide lockdown (Presidência da República, 2020)(Presidência do Conselho de Ministros, 2020). In order to slow down virus spreading and increase response to Coronavirus Disease 2019 (COVID-19) patients, healthcare institutions were required to adapt by changing management protocols and prioritizing resources and procedures (Her, 2020). All these adjustments had a significant impact on healthcare, affecting clinical care but also learning and residency training activities. Many studies reported a substantial decline in surgical activity, particularly non-urgent procedures, which consequently created fewer learning opportunities (Zimmermann and Nkenke, 2020)(Lisi et al., 2020).

In Portugal, Maxillofacial surgery (MFS) is a medical specialty for which trainees must have a Medical degree, but a Dentistry degree is not mandatory. After a year of general residency (common to all medical specialties), residents start a six-year training program which comprises 48 months devoted to Maxillofacial surgery, including rotations on head and neck oncological surgery and craniofacial malformations. The remaining time includes training in General Surgery (3 months), Stomatology (18 months) and 3 months for optional rotation on other relevant specialties such as (but not limited to) ENT, Neurosurgery, Ophthalmology or Plastic Surgery. Following MFS national board recommendations (Ministério da Saúde, 2013), residents should have performed at least 400 surgical procedures upon completion of training. Figures are merely

indicative but it is most advised to reach the following procedure numbers: 25 multiple teeth extractions under general anesthesia; 10 pre-prosthetic surgeries; 180 facial skeleton trauma treatments; 10 posttraumatic sequelae and reconstruction with bone grafts, flaps and/or implants; 10 oronasal and oroantral fistulae corrections; 10 perinasal sinuses disease treatments; 5 TMJ surgeries; 5 dentofacial deformity treatments; 5 cleft lip and palate surgeries; 10 cervical pathology surgeries; 25 salivary gland disease surgeries; 5 surgeries for nervous lesions; 20 surgeries for cysts of the maxillofacial region; 10 surgeries for benign tumors of hard tissues; 10 surgeries for benign tumors of soft tissues; 5 surgeries for malignant tumors; 5 Implantology surgeries and 40 plastic and reconstructive facial surgeries.

Regarding the impact of the Covid-19 pandemic on MFS, there were concerning reports suggesting an increased risk of viral exposure and transmission due to the proximity to the patient's upper airway during clinical assessment and surgical procedures (Mick and Murphy, 2020). Most surgical training programs adapted their conduct based on the scarce information available at the time (Zimmermann and Nkenke, 2020)(Grant et al., 2020)(Saibene et al., 2020) in order to minimize viral spread and protect their staff. The impact of these measures on medical education is fairly unknown with some studies reporting the reality of their countries' maxillofacial surgery training programs (Brar et al., 2021)(Huntley et al., 2020) but falling short in incorporating the perspective of one key element: the residents.

To our knowledge there has not been a nationwide survey in a European country assessing the MFS residents' perspective on the impact of the COVID-19 pandemic in their training. To this aim, we evaluated the self-reported surgical activity and clinical role at the hospital, the impact on their training and the perceived effect on their future.

METHODS

A questionnaire was designed by a panel of MFS residents from four different training centers and two training supervisors from one of the University Centers. (Appendix A). This questionnaire was sent out to all MFS residents in Portugal. The questionnaire was filled between Oct 13th and Oct 27th and participants were asked to report the activity of the previous 6 months (between March and September 2020) which included the national lockdown period. The pseudo-anonymized data was stored and analyzed securely in the primary institution. A total of 26 questions were asked.

The first section of the questionnaire explored demographic and academic data such as age, gender, year of residency and training center.

The second section focused on surgical activity: an estimation of the reduction in their personal surgical activity, type of surgical procedures and whether they were still performing outpatient consultations either in person or by phone. We further explored whether residents had been reassigned to other departments and whether they had been infected by COVID-19.

The third section was dedicated to the residents' current and future training. They were asked if their department had organized continuous education activities and if they were given more time for research or improvement of theoretical knowledge regarding their specialty. Further questions included how COVID-19 public health measures impacted on their training, if they felt their training program should be extended and whether the pandemic had induced any type of psychological burden. The answers were analyzed and verified by the panel.

RESULTS

The survey ran for two weeks and was completed by 32 MFS residents from all five Portuguese training centers. This cohort represented 100% of the current enrolled specialty trainees. We accepted answers from all years of residency. The average age of participants was 30 (SD = 3,4) years. There was a very balanced distribution of residents through every year of training. There is an average of 6,4 trainees per center, ranging from 9 to 3. A total of 19 participants were female and 13 were male. (Table 1)

Surgical Activity

All participants reported some degree of reduction in surgical activity when compared to the previous months. Three participants (9,4%) reported a decline in surgical activity of 90-100%, 11 (34,4%) stated a reduction of 75%, 12 (37,5%) expressed a decrease of 50% and 6 (18,8%) described a decline of 25%. No resident reported a complete stop in surgical activity. (Graph 1)

Regarding the types of surgery performed, 5 residents (15,6%) reported only performing traumatology cases while 27 trainees were still performing some form of elective surgery. The most common types of elective procedures were oral surgery (62,5%), salivary gland surgery (56,3%) and head and neck oncology (50%). Other types of surgeries performed by residents were orthognathic surgery (46,9%), reconstructive and esthetic surgery (31,3%) TMJ surgery (25%) and craniofacial surgery (21,9%).

All residents that already carried out their own outpatient consultations before the pandemic (14 of 32) kept their activity, and they all adjusted their practice by performing a combination of physical and telephone consultations.

During this period, 12 residents (37,5%) were mobilized to other hospital departments. The majority of this group (n=7) was assigned to COVID-19 hospital wards, 3 trainees worked in COVID-19 screening stations and another 3 residents reported working in the emergency department in a capacity other than MFS care.

Exactly half of the residents reported having direct contact with COVID-19 patients and 13 (40,6%) underwent SARS-Cov-2 testing, all but one through polymerase chain reaction (PCR) swab test. Fortunately, at the date of this study there were no reported cases of confirmed infections among Portuguese MFS residents. When asked about personal protective equipment (PPE), only 6 participants (18,8%) reported being provided with adequate PPE during all of the pandemic period. (Graph 2)

Surgical Training

Among all residents, 27 of 32 (84,4%) reported that their training center did not provide continuous education activities during this period. The remaining 5 (15,6%) reported that all provided activities occurred online, either webinars, clinical case discussions and/or journal clubs. Focusing on research, 8 residents (25%) reported being able to develop more research projects during this period and 21 (65,6%) also felt they had more time to further develop the theoretical background of their specialty.

Regarding fellowships and rotations in different departments, 15 residents (46,9%) had at least one rotation scheduled for this period, 11 in national centers, 2 in international centers and 2 in both national and foreign institutions. For those aiming to rotate on Portuguese centers, 11 of 13 were able to undertake the rotation with some calendar adjustment. The other 2 residents had to cancel their rotation but expect being able to reschedule in the future. Among the few with expected international rotations, 3 of the 4 residents had to cancel their visits and do not foresee the possibility to reschedule until the end of their residency.

When asked about the impact of COVID-19 pandemic on their training, 19 of the 32 participants (59,4%) felt their training had suffered in general, 10 (31,3%) thought their training had suffered but they had been able to use the time to perform research and deepen their theoretical knowledge of the specialty. Three residents (9,4%) reported no change in their training. (Graph 3)

Following these results, 13 participants (40,6%) stated that their residency training should be extended. Nine residents (28,1%) felt that extension should be considered if training limitations lasted for more than three months and 3 (9,4%) approved the idea of lengthening training if training limitations lasted for more than six months. A group of 7 trainees (21,9%) felt their training did not need to be prolonged. (Graph 4)

Finally, 23 of the 32 trainees (71,9%) reported some level of psychological burden caused by the pandemic. Eighteen participants (56,3%) were anxious for the health of their family and loved ones, 15 (46,9%) expressed concerns with the future of their surgical training and 8 (25%) experienced some anxiety for their own health.

DISCUSSION

Some publications have addressed the impact of COVID-19 in MFS training (Brar et al., 2020)(Huntley et al., 2020). These either focus on the perspective of training program directors or are from non-European settings. Other surveys have previously been conducted focusing on resident satisfaction (Pabst et al., 2019) but they did not account for the current pandemic scenario. To the best of our knowledge, this is the first national survey conducted in Europe focusing on the residents' perspective of COVID-19 impact in MFS training.

This study, with a 100% response rate, provides a very comprehensive national portrait of the residents' perceptions about the impact of the pandemic on their surgical training. One must bear in mind that the cross-sectional design of the study provides a "snapshot" amidst a developing pandemic scenario. The survey focused on the first pandemic wave and we are now living through the second wave, with a much larger number of COVID-19 cases and increased burden on the national health system. This escalation of the public health crisis has led to the issue of a second "State of Emergency"(Presidência da República, 2020), beginning November 6th with no predictable end. It is still too early to assess the impact of this second wave on surgical education and training, but we can only anticipate that it will add restraints to the residency programs.

There was a significant perceived decrease in surgical activity across all centers. This decrease was felt as meaningful by the residents, with almost 91% reporting some form of training constraint. However, these results must be interpreted with care given that this study has several limitations. There is obvious bias related to self-reported data. These perceived changes were not substantiated by an objective quantification of the number of surgeries performed. This could have been used to compare with an historical cohort and better define the differences in surgical

procedures, especially to evaluate differences between the distinctive types of surgery. Other elements of clinical activity such as complication rates or length of stay were not collected, which could also have been used to better understand the impact of the pandemic on residency training. Differently from other publications (Pabst et al., 2019), our study did not focus in other factors that could contribute to resident satisfaction, such as work-family balance.

Most would agree that the key to acquiring surgical skills is through continued practice. Studies have shown that improvement in a surgeon's or in a center's clinical outcome is clearly related with increased surgical case volume (Kapila et al., 2020). If the impact of surgical restrictions continues after the studied period, it is clear that operative caseloads and surgical learning opportunities will decline. It is also true that time spent in the operating room may not be the sole indicator of a successful training. Deliberate practice, by setting clear goals and high-performance standards, accompanied with skills-based learning programs (number of anastomoses performed in a microsurgery laboratory, for example) may prove to be an important complement to achieve the expected high levels of expertise.

Our study showed that only a small number of trainees was exposed to some form of alternative education provided by their training center, mainly through the implementation of virtual educational activities, such as webinars and virtual journal clubs. However, international MFS associations, medical societies and commercial companies have been providing an increasing number of webinars and virtual discussion forums that can be accessed by all residents in their free time. Because there was no validation from the training centers, external webinars were not considered official forms of training and were not inside the survey's scope but surely represent some degree of learning experience. These virtual tools are proven methods for continuing medical education (Wagner et al., 2019)(Martin-Smith et al., 2015) but are clearly undervalued,

and we encourage the inclusion of options such as structured webinar schedules, video recordings of surgical procedures or surgical simulation as formal teaching tools for residents. Surgical simulation training in particular is proposed by many authors as an effective teaching aid to both optimize a trainee's learning time as well as reduce morbidity and operating time for patients. It has proven validity and demonstrable transfer of skills to the clinical setting (Milburn et al., 2012). Despite the evidence, surgical simulation has been clearly underused in MFS training (Ahmed et al., 2019) and Portugal is no exception. There are no studies measuring the impact of surgical simulation in our country and, to the best of our knowledge, none of the training centers have these tools at their disposal. Several reasons may justify this reality, most likely related to the cost-effectiveness of setting up a simulation program for such a small surgical community (Maloney and Haines, 2016). Some trainees have used this time to get more involved in research projects, and the majority of residents claim having been able to deepen some theoretical topics that time restraints may not have allowed before. This period could be considered by both trainers and trainees as an opportunity to discuss short- and long-term education strategies and implement "unconventional" new ways to strengthen residency programs and safeguard high-quality training.

Despite not knowing the full impact on training, it is troublesome that a majority of MFS residents stated the need to consider the extension of their training time. This was particularly true for residents on their last two years of training, with only one resident not considering necessary any form of training prolongation. These results probably arise from the fact that these residents have less time to "accommodate" the loss of operating time. Also, it is common in various training centers to expose the late-year residents to more advanced and complex procedures, which makes this period particularly critical.

There is a very constructive culture in most Portuguese training centers where residents are encouraged to rotate through international reference centers, enabling them to focus in some particular subject of their interest and bridge the gap between countries and realities. These rotations require meticulous scheduling and financial preparation from the residents and are commonly undertaken in the final years of residency. In some cases, there was full willingness from both trainee and host center but government-issued mobility restrictions impeded travelling between countries. These factors may have contributed to the reported inability to carry out the international rotations during this period.

Some studies focusing on other specialties (Kapila et al., 2020) have also included an international evaluation of specialty training centers. Given the pandemic nature, this design could help better understand the differences between nations but does not accommodate the fact that countries have experienced different epidemiologic scenarios which could introduce some bias to the results.

We have previously stated our specialty training structure in Portugal. MFS training programs have a fair degree of variability throughout Europe in the number of years, rotations and trainee's background. Therefore, a standardized questionnaire and its timely distribution in an international study project did not seem feasible on such a time-dependent subject.

Surgical residencies are crucial, ever evolving and multidimensional projects. By providing a different perspective, we aim to help residency program directors decide the future direction in these uncertain times. Our hope is that this study can be used to objectively assess the impact in MFS training in Portugal and to draw a comparison with other European experiences.

CONCLUSION

The COVID-19 pandemic has had a significant impact on health institutions and on maxillofacial surgery residents training. Portugal is currently facing a second pandemic wave and there is no telling how long these restrictions will remain in place. In our study, we found a significant decrease in surgical activity among all trainees coupled with a unanimous concern regarding their training progression. At the same time, we have perceived an expansion in possibilities for unconventional methods of trainee education which present potential complements in this new era of surgical training.

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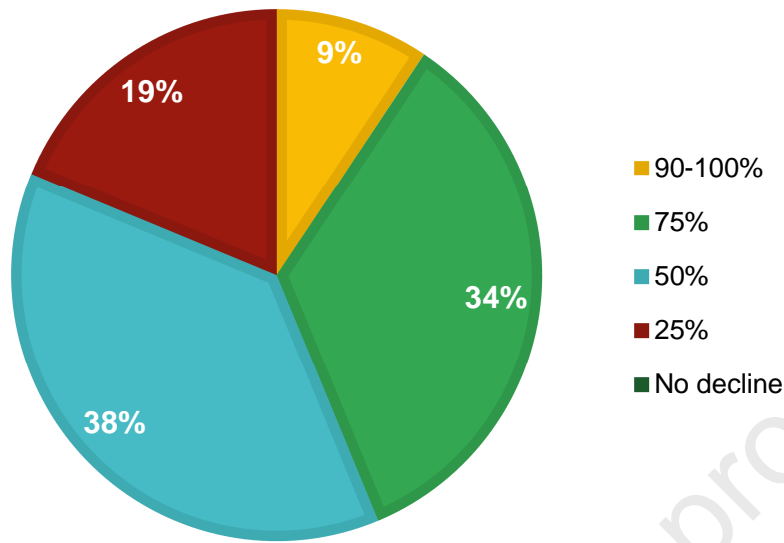
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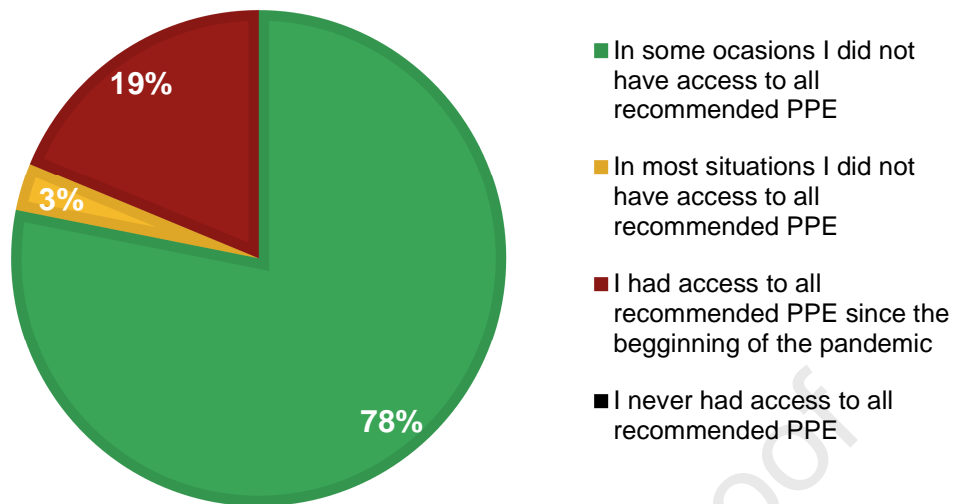
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Characteristics	n	%
Sex		
Male	13	40,6
Female	19	59,4
Age (years)		
20-29	12	37,5
30-39	16	50
≥40	2	6,3
Training Center		
CHUSJ	7	21,9
CHUP	5	15,6
CHUC	9	28,1
CHULC	8	25
IPOFG	3	9,4
Year of Residency		
1 st year	5	15,6
2 nd year	6	18,8
3 rd year	6	18,8
4 th year	5	15,6
5 th year	4	12,5
6 th year	6	18,8

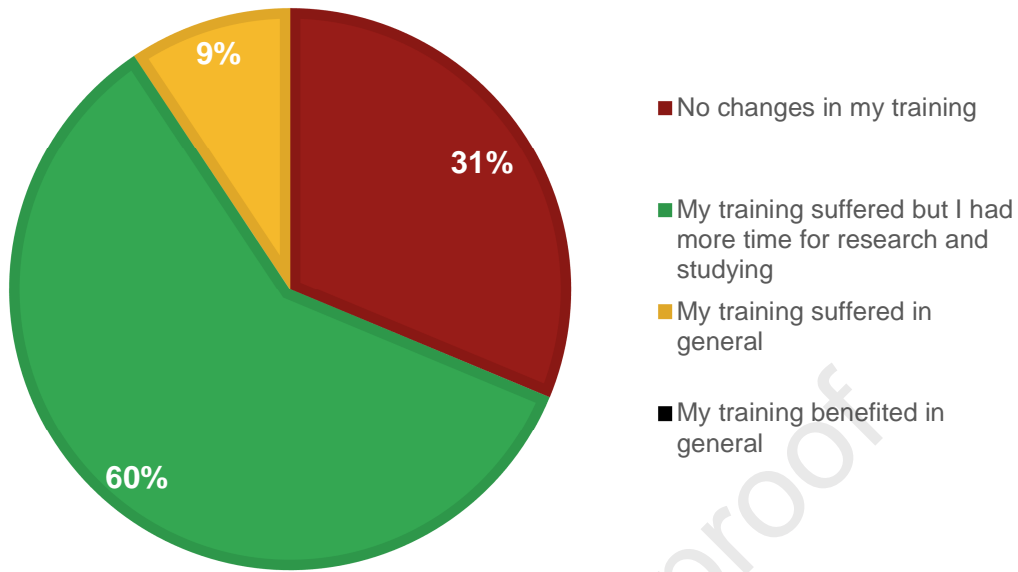
Table 1: Summary of demographic results from the survey's first section. CHUSJ – Centro Hospitalar Universitário de São João; CHUP – Centro Hospitalar Universitário do Porto; CHUC – Centro Hospitalar Universitário de Coimbra; CHULC – Centro Hospitalar Universitário de Lisboa Central; IPOFG – Instituto Português de Oncologia de Lisboa Francisco Gentil.



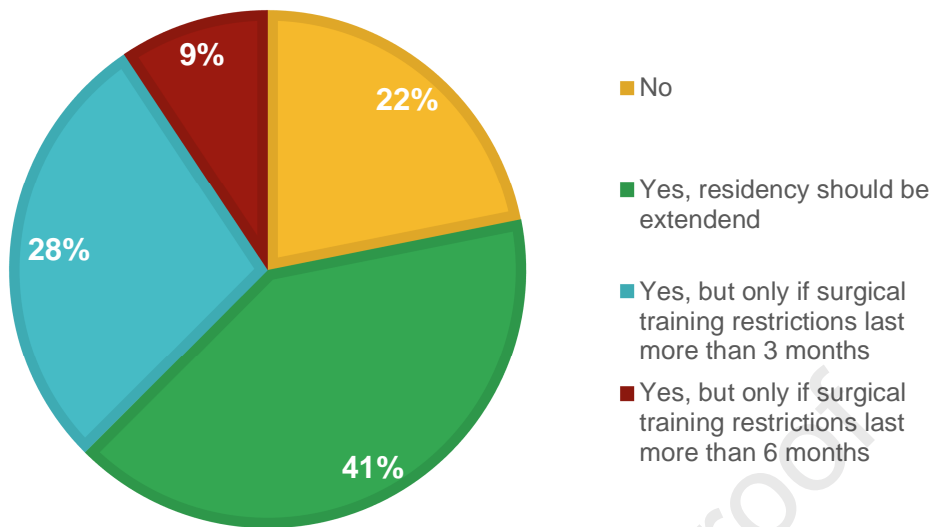
Graph 1: Answers to the question “What was your estimated decreased time of surgical activity/operating room presence?”



Graph 2: Answers to the question “Do you consider that during this time you has access to all the necessary personal protective equipment?”. PPE – Personal Protective Equipment



Graph 3: Answers to the question “What was the perceived impact of COVID-19 pandemic in your residency training?”



Graph 4: Answers to the question “Do you think that your residency should be extended to make up for the loss of surgical exposure?”

O IMPACTO DA PANDEMIA COVID-19 NA FORMAÇÃO EM CIRURGIA MAXILOFACIAL: UMA PERSPETIVA REPRESENTATIVA DOS MÉDICOS INTERNOS

A sua participação neste estudo é totalmente voluntária e é livre. Será adotado um conjunto de procedimentos de natureza ética de forma a assegurar que a sua participação será mantida em confidencialidade. Os seus dados sociodemográficos, clínicos e os resultados das suas avaliações serão anonimizados (através de um código) e introduzidos exclusivamente pela equipa de investigação numa base de dados sem qualquer referência ao seu nome ou outros dados identificativos, de acordo com a legislação em vigor.

Os dados recolhidos neste estudo serão agregados e nunca serão apresentados de forma individual, pretendendo apenas caracterizar os participantes neste estudo no seu conjunto. Deste modo, se os resultados deste estudo forem publicados, a sua identidade nunca será revelada.

A. DEMOGRAFIA E INFORMAÇÃO ACADÉMICA

1. Ano de internato (por favor selecione uma das respostas em baixo)

- a. 1º
- b. 2º
- c. 3º
- d. 4º
- e. 5º
- f. 6º

2. Qual o seu centro de formação? (por favor selecione uma das respostas em baixo)

- a. Centro Hospital Universitário do Porto (CHUP)
- b. Centro Hospitalar Universitário de São João (CHUSJ)
- c. Centro Hospitalar Universitário de Coimbra (CHUC)
- d. Centro Hospitalar Universitário de Lisboa Central (CHULC)
- e. Instituto Português de Oncologia de Lisboa Prof. Francisco Gentil (IPOLFG)

3. Qual a sua data de nascimento? (por favor preencha em baixo)

___ / ___ / _____

4. Qual é o seu género? (por favor selecione uma das respostas em baixo)

- a. Masculino
- b. Feminino

B. ATIVIDADE CIRURGICA

As questões desta seção devem ser respondidas tendo como referência o período de **1 de Março de 2020 a 30 de Setembro 2020** e a atividade realizada **exclusivamente no contexto do internato médico**.

1. **Qual foi a diminuição do seu tempo de atividade cirúrgica/presença no bloco? Por favor dê uma estimativa selecionando uma das seguintes respostas**
 - a. Sem alterações
 - b. 25%
 - c. 50%
 - d. 75%
 - e. 90-100%

2. **Que tipo de procedimentos cirúrgicos realizou entre 1 de Março e 30 de Setembro 2020? (mais que uma resposta é válida, selecione todas as aplicáveis)**
 - a. Não realizei quaisquer procedimentos
 - b. Traumatologia facial
 - c. Cirurgia Oncológica
 - d. Cirurgia das Glândulas Salivares
 - e. Cirurgia ATM
 - f. Cirurgia Ortognática
 - g. Cirurgia Reconstructiva e Estética
 - h. Cirurgia Craniofacial
 - i. Cirurgia Oral
 - j. Cirurgia pré-protética
 - k. Cirurgia Implantológica intra e extra-oral

3. **Antes deste período de temporal (1 de Março a 30 de Setembro 2020) já realizada consulta própria, tutelada, de Cirurgia Maxilofacial? (por favor selecione uma das respostas)**
 - a. Não
 - b. Sim

4. **Se respondeu sim à pergunta anterior, manteve a realização de Consultas de Cirurgia Maxilofacial? (por favor selecione uma das respostas)**
 - a. Não
 - b. Sim

5. **Se respondeu sim à pergunta anterior, em que regime foram realizadas? (mais que uma resposta é válida, selecione todas as aplicáveis)**
 - a. Apenas consulta telefónica

- b. Apenas consulta presencial
- c. Ambas
- d. Outra _____
- e. Não aplicável

6. Durante este período, foi alocado a outro departamento do Hospital? (por favor selecione uma das respostas)

- a. Não
- b. Sim

7. Se sim, em que departamento(s) trabalhou? (mais que uma resposta é válida, selecione todas as aplicáveis)

- a. UCI
- b. Serviço de Urgência (que não CMF)
- c. Unidade Médica COVID-19
- d. Cuidados primários
- e. Outros serviços não Hospitalares (lares, centros de triagem ou rastreio)
- f. Não aplicável

8. Durante este período, contactou diretamente com algum paciente com COVID-19? (por favor selecione uma das respostas)

- a. Não
- b. Sim

9. Considera que durante este período teve acesso a todos os meios de proteção individual adequados? (por favor selecione uma das respostas)

- a. Tive acesso a todos os meios de proteção desde o início da Pandemia
- b. Em algumas ocasiões não tive acesso a todos os meios de proteção individual adequados
- c. Na maioria das situações não tive acesso a todos os meios de proteção individual adequados
- d. Considero que nunca tive acesso a todos os meios de proteção adequados durante a Pandemia

10. Durante este período, foi testado para a COVID-19? (por favor selecione uma das respostas)

- a. Não
- b. Sim

11. Sim respondeu sim, a que teste foi submetido? (por favor selecione uma das respostas)

- a. RT-PCR
- b. Teste Serológico
- c. Ambos

12. Teve uma infecção confirmada de COVID-19? (por favor selecione uma das respostas)

- a. Não
- b. Sim

Journal Pre-proof

C. FORMAÇÃO CIRURGICA E IMPACTO PESSOAL

As questões desta seção devem ser respondidas tendo como referência o período de **1 de Março de 2020 a 30 de Setembro 2020** e a atividade realizada **exclusivamente no contexto do internato médico.**

1. O seu serviço/instituição de formação providenciou, durante este período, formas de educação contínua, como *journals clubs*, *webinars*, investigação, atividade laboratorial? (por favor seleccione uma das respostas)
 - a. Não
 - b. Sim

2. Se respondeu sim, estas formas de educação foram em formato virtual, como *webinars*, *journal clubs online* e/ou apresentações de casos?
 - a. Sim
 - b. Não, por favor detalhe:

3. Conseguiu desenvolver mais atividades de investigação durante este período? (por favor seleccione uma das respostas)
 - a. Não
 - b. Sim

4. Sentiu que teve mais tempo para aprofundar os aspetos teóricos da sua especialidade? (por favor seleccione uma das respostas)
 - a. Não
 - b. Sim

5. Tinha previsto para este período algum estágio fora do seu serviço de formação?
 - a. Não
 - b. Sim, num serviço em Portugal
 - c. Sim, num serviço no estrangeiro
 - d. Ambos

6. Em relação aos estágios num serviço em Portugal:
Durante este período, existiu alteração nos estágios agendados fora do seu serviço de formação?
 - a. Não tive qualquer limitação, mantive os estágios como previsto
 - b. Mantive os estágios, mas tive que alterar a sua data e/ou duração
 - c. Mantive os estágios, mas tive que alterar o serviço de acolhimento
 - d. Os estágios foram cancelados, mas prevejo conseguir remarcar

- e. Os estágios foram cancelados e não prevejo conseguir remarcar
- f. Não tinha estágios agendados

7. Em relação aos estágios num serviço no estrangeiro:

Durante este período, existiu alteração nos estágios agendados fora do seu serviço de formação?

- a. Não tive qualquer limitação, mantive os estágios como previsto
- b. Mantive os estágios, mas tive que alterar a sua data e/ou duração
- c. Mantive os estágios, mas tive que alterar o serviço de acolhimento
- d. Os estágios foram cancelados, mas prevejo conseguir remarcar
- e. Os estágios foram cancelados e não prevejo conseguir remarcar
- f. Não tinha estágios agendados

5. Como considera que a pandemia COVID-19 impactou a sua formação? (por favor seleccione uma das respostas)

- a. A minha formação em geral foi prejudicada
- b. A minha formação cirúrgica foi prejudicada, mas tive mais tempo para desenvolver investigação e para estudar os aspetos teóricos da minha especialidade
- c. Não houve alteração na minha formação
- d. A minha formação em geral foi beneficiada

6. Considera que a sua formação deveria ser prolongada para compensar os tempos cirúrgicos perdidos?

- a. Não
- b. Sim, mas apenas se as limitações durarem mais de 3 meses
- c. Sim, mas apenas se as limitações durarem mais de 6 meses
- d. Sim, a formação deveria ser prolongada

7. A pandemia COVID-19 afetou-o psicologicamente? (mais que uma resposta é válida, seleccione todas as aplicáveis)

- a. Não
- b. Sim, estou preocupado com a minha própria saúde
- c. Sim, estou preocupado com a saúde dos que me são próximos (família, amigos, pessoas com quem vivo)
- d. Sim, estou preocupado com o impacto da COVID-19 na minha formação cirúrgica