

## **Impact of covid-19 on oral and maxillofacial surgeries at the Hospital de Urgências de Teresina-PI**

**Impacto da covid-19 nas cirurgias bucomaxilofaciais no Hospital de Urgências de Teresina-PI**

**Impacto del covid-19 en las cirugías orales y maxilofaciales del Hospital de Urgências de Teresina-PI**

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### **Abstract**

In March 2020, Piauí diagnosed the first cases of covid-19, a new virus for the scientific community, which brought many challenges to the population and health professionals. With this virus, there was a drastic drop in the numbers of elective care as well as in emergency care, the lack of protocols, as well as the absence of adequate protection measures that made it impossible for the calls to continue. In a survey carried out by the Brazilian College of Oral and Maxillofacial Surgery and Traumatology, a drop of 92.5% was detected in terms of scheduled surgeries. This number is a warning about the need to plan and act in order to prevent overcrowding related to postponed procedures. This work aims to analyze how covid-19 influenced and changed the oral maxillary surgical schedules of this emergency hospital, to identify the perception of the professionals involved regarding these changes. The results prove that after a

year of the pandemic, some problems still persist: EPI'S in small numbers, professionals reporting fatigue and reduced number of surgeries when compared to before the pandemic.

**Keywords:** Mouth rehabilitation; Surgery; Pandemics; SARS-CoV.

### Resumo

Em março de 2020 o Piauí diagnosticou os primeiros casos de covid-19, um vírus novo para comunidade científica que trouxe muitos desafios para população e profissionais de saúde. Com esse vírus foi perceptível uma queda drástica nos números de atendimentos eletivos assim como também nos atendimentos de urgência, a falta de protocolos, bem como a ausência de medidas de proteção adequadas que impossibilitaram que os atendimentos continuassem. Em levantamento realizado pelo colégio brasileiro de cirurgia e traumatologia bucomaxilofacial foi detectado uma queda de 92,5% no que se refere a cirurgias programadas. Esse número é um alerta quanto a necessidade de planejar e atuar no intuito de evitar que ocorra uma superlotação relacionada aos procedimentos adiados. Este trabalho visa analisar como a covid-19 influenciou e alterou as programações cirúrgicas buco maxilares deste hospital de urgências, identificar a percepção dos profissionais envolvidos quanto a estas alterações. Os resultados comprovam que decorrido um ano da pandemia, alguns problemas ainda persistem: EPI'S em número reduzido, profissionais relatando cansaço e número de cirurgias reduzidas quando comparadas a antes da pandemia.

**Palavras-chave:** Reabilitação bucal; Cirurgia maxilofacial; Pandemia; SARS-CoV.

### Resumen

En marzo de 2020, Piauí diagnosticó los primeros casos de covid-19, un virus nuevo para la comunidad científica, que trajo muchos desafíos a la población y a los profesionales de la salud. Con este virus se produjo una caída drástica en los números de atención electiva así como en la atención de emergencia, la falta de protocolos, así como la ausencia de medidas de protección adecuadas que imposibilitaron la continuación de las llamadas. En una encuesta realizada por el Colegio Brasileño de Cirugía y Traumatología Oral y Maxilofacial, se detectó una caída del 92,5% en cuanto a las cirugías programadas. Este número es una advertencia sobre la necesidad de planificar y actuar para evitar el hacinamiento relacionado con los trámites postergados. Este trabajo tiene como objetivo analizar cómo el covid-19 influyó y modificó los horarios quirúrgicos maxilares bucales de este hospital de emergencia, para identificar la percepción de los profesionales involucrados con respecto a estos cambios. Los resultados comprueban que después de un año de la pandemia, aún persisten algunos problemas: EPI'S en pequeño número, profesionales que informan fatiga y reducción del número de cirugías en comparación con antes de la pandemia.

**Palabras clave:** Rehabilitación bucal; Cirugía bucal; Pandemias; SARS-CoV.

## 1. Introduction

Covid-19, first reported in Wuhan, capital of Hubei, China, is a single-chain, enveloped, positive virus (+) (Ahn, D. G., et al., 2020). Identified with SARS-COV2, an acute respiratory syndrome, it has caused a worldwide impact on public health, due to the large number of confirmed cases and registered deaths (Li, et al., 2020; Nogueira, et al., 2021; Silva, et al., 2021). To try to contain this advance due to the high contagion power of the disease, patients who had any symptoms were isolated to obtain a diagnosis and adequate therapy, since covid-19 manifests itself in various ways both in the asymptomatic patient and in the more severe and may reach death. (Esakandari, et al., 2020; Andrade, et al., 2021; Yano & Rodrigues 2021).

Because of this, the health system sought measures to develop protection protocols for health professionals, understanding that some specialties presented high risks due to exposure to the virus, such as health professionals more specifically the dental area, which during procedures generate aerosols (AGPs), thus having a high risk of contamination. (De Almeida, & Ferraz, 2020; Panesar et al., 2020). However, it was seen that, in order to maintain a safe standard of care, the distribution and availability of PPE (Personal Protective Equipment) should be equal, but in many regions the lack of PPE makes it difficult for procedures to take place in a safe way, as a result of the economic crisis generated by covid-19 (Allewi, et al., 2020; Cavalcante, et al., 2020).

Aiming at saving resources and the exposure of affected patients, elective surgeries began to be postponed, thus giving priority to urgent and emergency care, in order to have all available health resources and follow the most correct protocols (Zimmermann, & Nkenke, 2020).

According to Ather (2020) it is possible to notice that a considerable number of health professionals are included in the statistics of infected, which can be caused by close contact with the patient, and in the case of the dental surgeon there is an

aggravation of face-to-face care in addition to the high production of aerosol (Medeiros et al., 2021). Based on this statement, the treatment of choice should be conservative when possible and in cases of open surgeries, transcutaneous approaches should be chosen in order to minimize the contamination rate. The objective of this study is to evaluate how care against covid-19 is composed in a health service in Piauí.

## **2. Methodology**

This work was carried out in the municipality of Teresina-PI, in the Hospital de Urgências de Teresina Professor Zenon Rocha - HUT, where there are about 10 professionals working in oral and maxillary facial surgery among residents and professionals in the area. The participants of this study are oral and maxillary facial surgeons who worked in the period from March to December/2020 in this location. The hospital serves the entire state of Piauí and receives patients from some of the neighboring states, such as Maranhão, Tocantins and Pará. And it is currently one of the main hospitals responsible for care in the State.

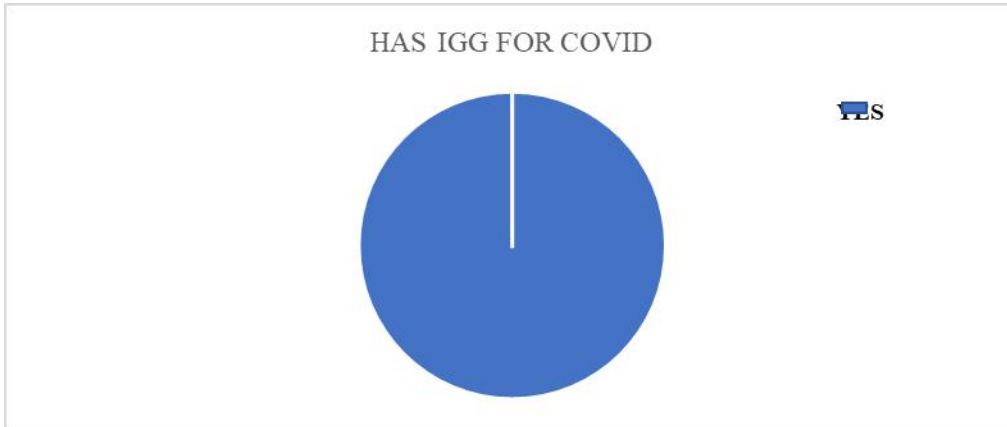
The present study has the character of descriptive quantitative research. According to Lakatos (2005), the research is based on extensive direct observation carried out through a questionnaire. The same author also says that questionnaire is a data collection tool, composed of questions that must be answered without the presence of the interviewer. (Lakatos, et al., 2005). The questionnaire proposed in this term paper had as the main objective to measure the impact of covid-19 in oral and maxillofacial surgeries of the Teresina emergency hospital, in addition to investigating difficulties faced and from the data collected suggest significant improvements that may contribute to the improvement of the services offered by the hospital. The questionnaire applied through printed questions was composed of fifteen questions, between objective and subjective questions. The survey was answered by 8 professionals in the field. All professionals who responded to this research authorized the presentation of the data of this study and the publication of its results. To this end, we guarantee the anonymity of the respondents, through a free and Informed Consent Form - ICF, we also inform the participants about the objectives and relevance of the proposed study, as well as procedures and risks.

The present study consisted of three stages: a) the first step was to identify the impact given caused by covid-19 in the oral and maxillofacial surgeries of the Teresina emergency hospital, this was carried out through the application of a questionnaire to professionals in the area, b) the second stage analyzed the results collected from the application of the questionnaires with graphics, in addition it was used secondary sources that are articles, bibliographies, research in the area; c) the last stage consisted of proposing improvement suggestions regarding the care and suggestions to optimize surgeries based on the diagnosis made, such as providing courses that enable and provide safety to the professionals, creating protocols that optimize surgeries. As for the questions of the questionnaire we opted for open and closed questions. The questions are of objective/subjective aspects and applied through printed questionnaires. Then the data were described, analyzed and tabulated in excel.

## **3. Results and Discussion**

The results reveal the information obtained from the questionnaires. All survey participants reported having IGG for covid-19-as shown in Chart 1. It is worth mentioning that these professionals received the 1st and 2nd dose of the covid vaccine in February, taking into account their priority group.

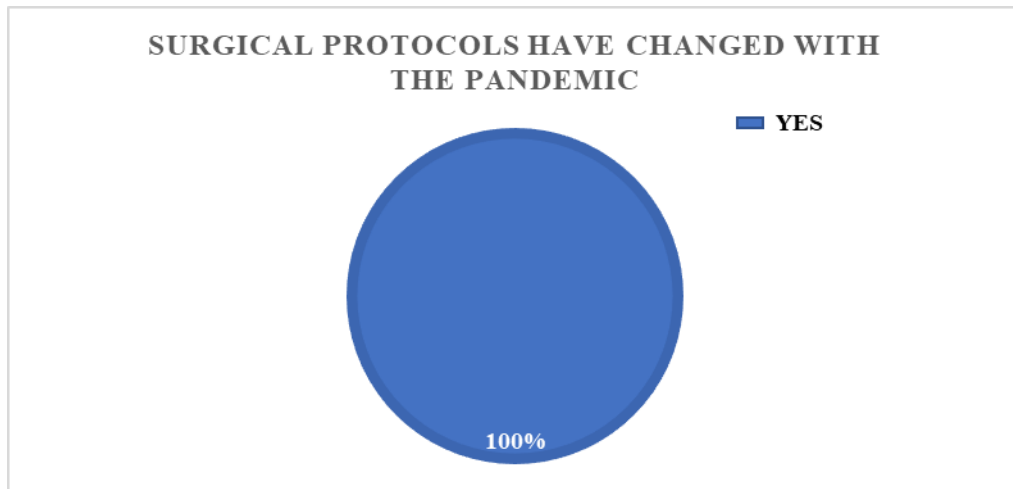
**Graph 1 – CTBMF percentage with Igg.**



Source: Authors (2021).

With regard to surgical protocols, the responses were unanimous regarding their alterations (Graph 2). The surgical protocols that until then aimed mainly to save lives, gained new bias mainly regarding the safety of patients and professionals involved. Biosafety has gained greater importance and changes in protocols have become essential for surgical success.

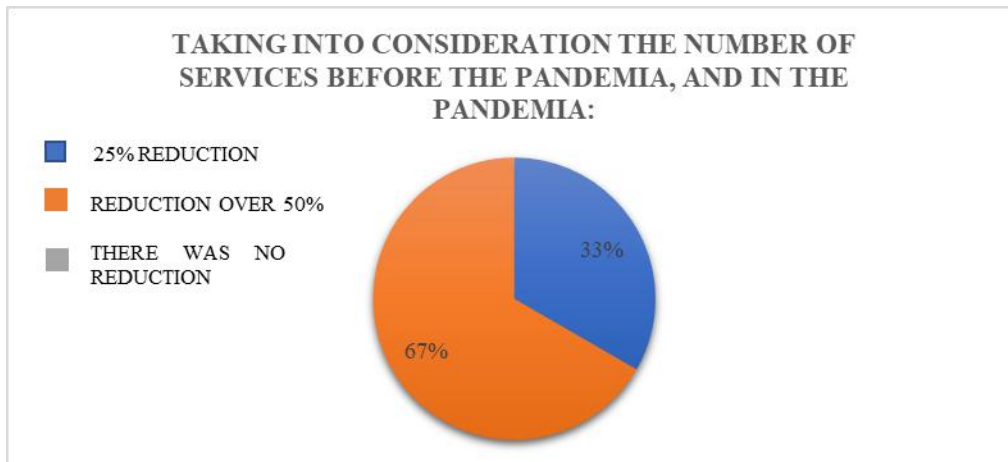
**Graph 2 - Changing Surgical Protocols during the pandemic.**



Source: Authors (2021).

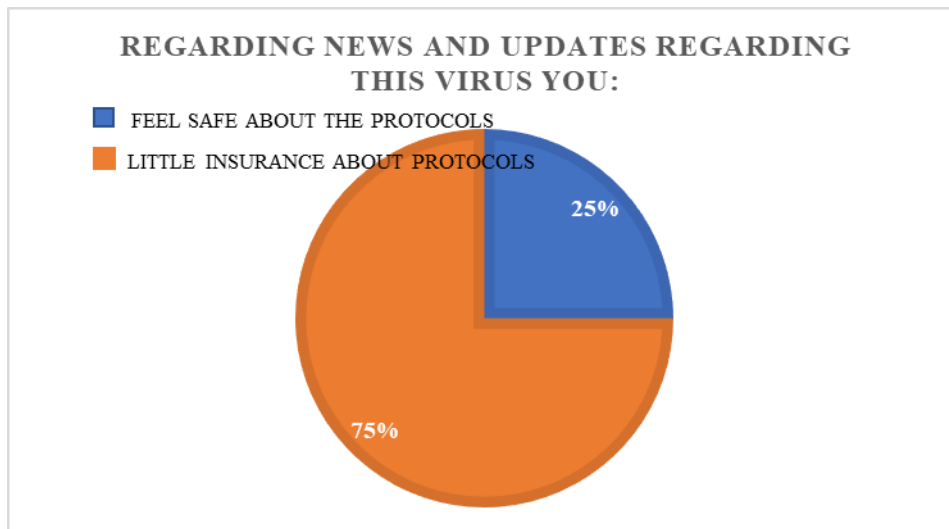
When asked about the number of visits taking into account the numbers prior to the pandemic and the visits performed during the pandemic – in this case until April 2020, the results obtained were: 67% of those surveyed reported that there was a reduction of more than 50% with regard to surgeries and visits of this specialty and 33% reported that this reduction was only 25%, as shown in Graph 3. Regarding the updates regarding this virus 75% reported feeling unsafe regarding the protocols while 25% of the respondents answered that they feel safe (Graph 4). Considering the untimely way in which this virus has become part of the World routine and the frequent changes of protocols and updates regarding it, mastering and having confidence in the protocols is still an arduous mission for the professionals who make up the front line.

**Graph 3** – Reduction percentage in calls compared to the number of calls before the pandemic.



Source: Authors (2021).

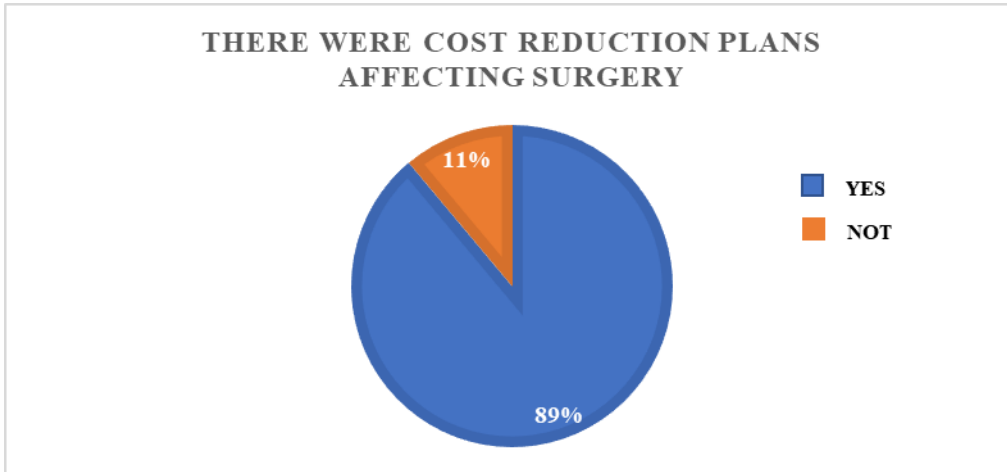
**Graph 4** - Security regarding news, updates and protocols regarding covid-19.



Source: Authors (2021).

Regarding surgical costs and expenses, it is possible to assess that the majority of respondents, 89% report that there were cost reduction plans that affected the oral and maxillofacial surgeries (Graph 5).

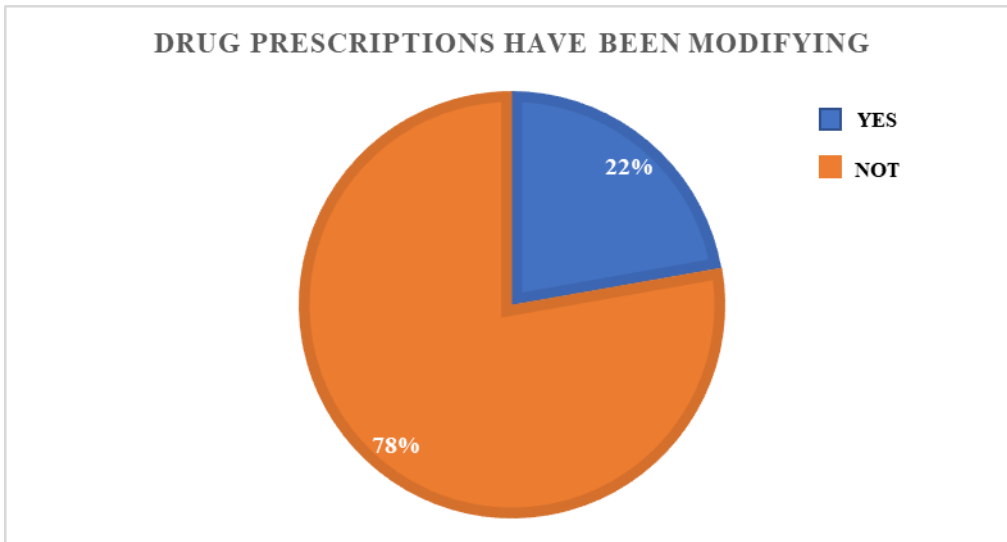
**Graph 5 - Reduction of surgery-related costs.**



Source: Authors (2021).

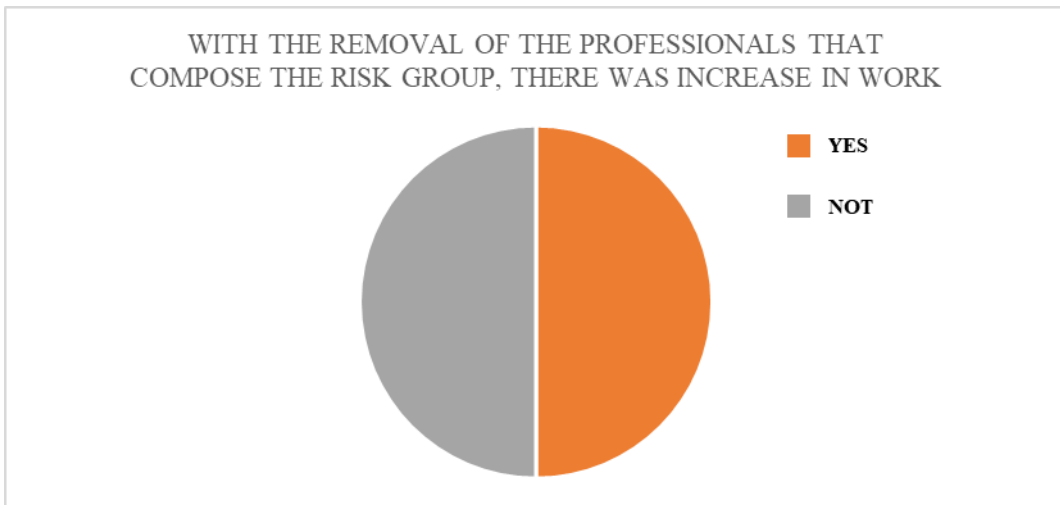
When asked about changes in drug prescriptions during the period that covers this research, the answers obtained were 22% say yes, while 78% report that there were no changes. (Chart 6). Revealing that there was no standardization of protocols with regarding prescriptions. Thus, 50% of the professionals who participated in this research affirm that with the departure of the professionals who make up the risk group there was an increase in work while the other 50% opine that there was no increase in work, as illustrated in Graph 7.

**Graph 6 – Changes in drug prescriptions.**



Source: Authors (2021).

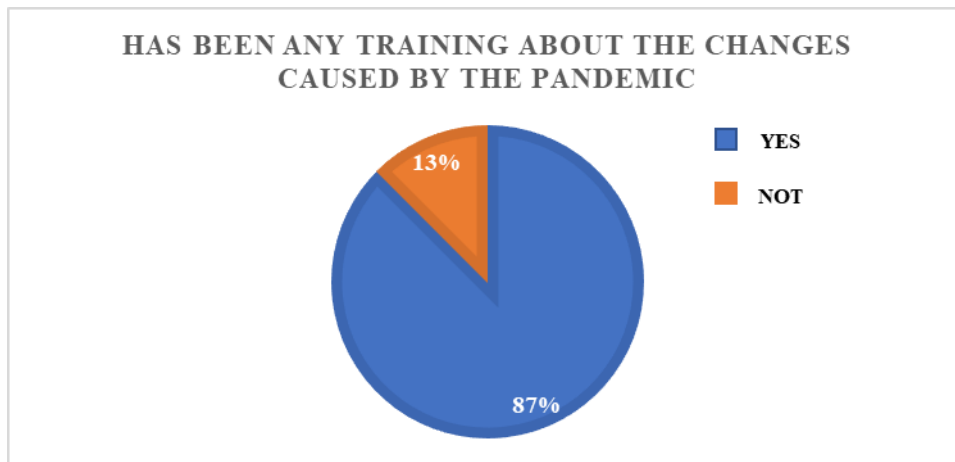
**Graph 7** - Increased work with the removal of professionals who make up the risk group.



Source: Authors (2021).

Regarding training on the changes caused by the pandemic, the answers obtained were: 87% participated in the training, while 13% chose not to participate (Graph 8).

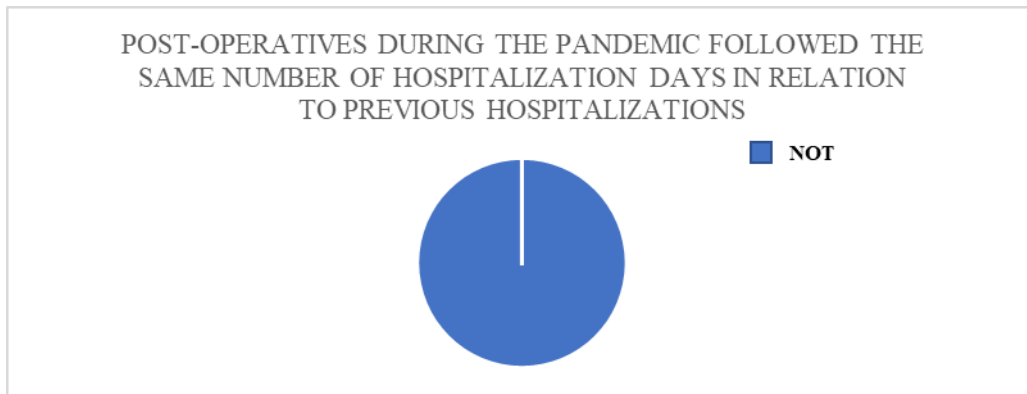
**Graph 8** - Participation in Training about the changes caused by the pandemic.



Source: Authors (2021).

When asked about the number of days of postoperative hospitalization of the patient at the current moment of the pandemic, in relation to the hospitalizations in the period before the pandemic, all were unanimous about the change in this number of days, reporting that in this case the patient was discharged earlier. (Chart 9). This early discharge was carried out mainly as an alternative to reduce positive cases at the site, considering that the hospital had mixed care (covid and non-covid patients), and even with distinct and isolated areas, there was a possibility of a flow of professionals working in both areas, thus increasing the risk of contamination.

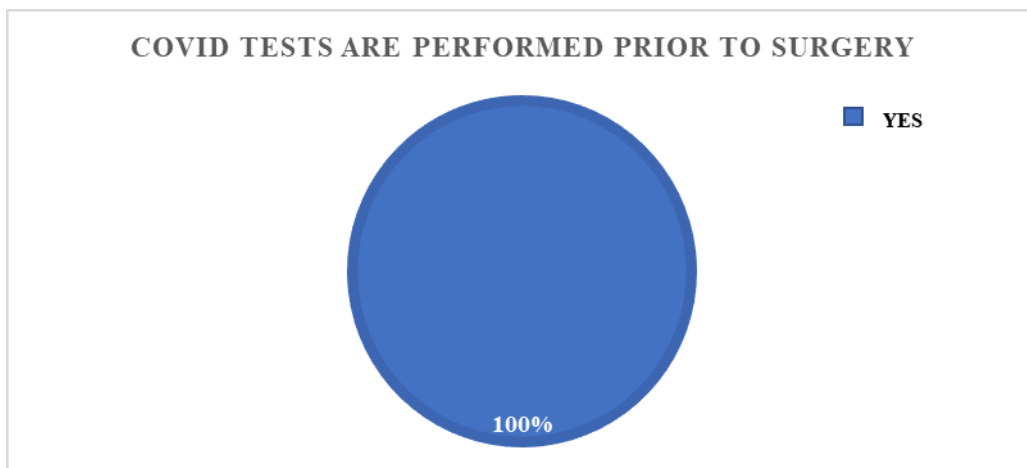
**Graph 9** - Changes regarding the postoperative period in terms of hospitalization days.



Source: Authors (2021).

The professionals were also unanimous regarding the performance of tests before surgical procedures (graph 10). And also in the light of this prism they report that in cases of patients who test positive for covid, surgery is postponed – a protocol adopted by the oral and maxillary surgeons who participated in this research.

**Graph 10** - Preoperative Covid test.

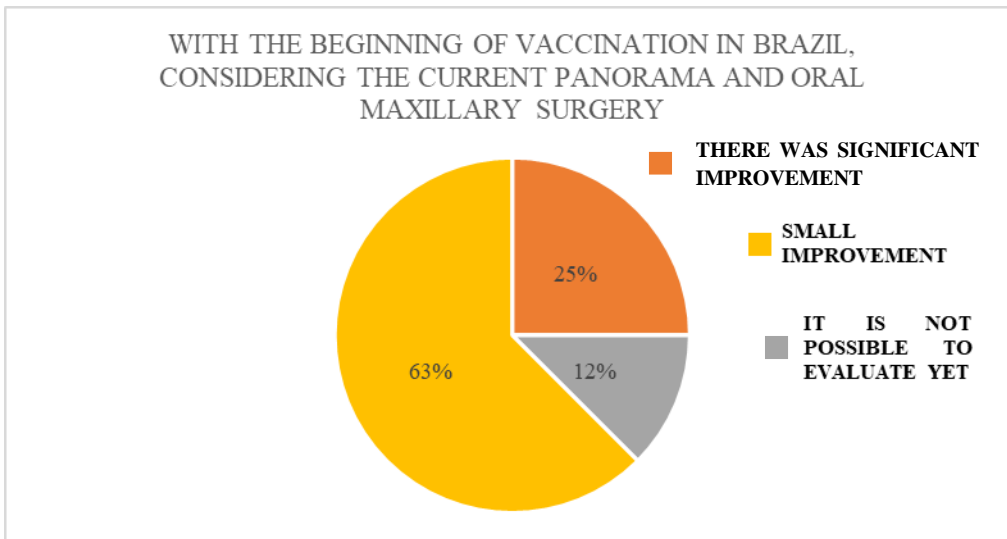


Source: Authors (2021).

It should be noted that even after the beginning of vaccination in the country, taking into account the current landscape regarding vaccines and with the State of Piauí with vaccination coverage in 17% (according to data from the Ministry of Health), professionals assess that the improvement in what relates to surgical procedures was small, as recorded by 63% of the participants in this research, in contrast 25% of respondents assess that there was significant improvement and 12% report that it is not yet possible to evaluate this scenario (Graph 11).

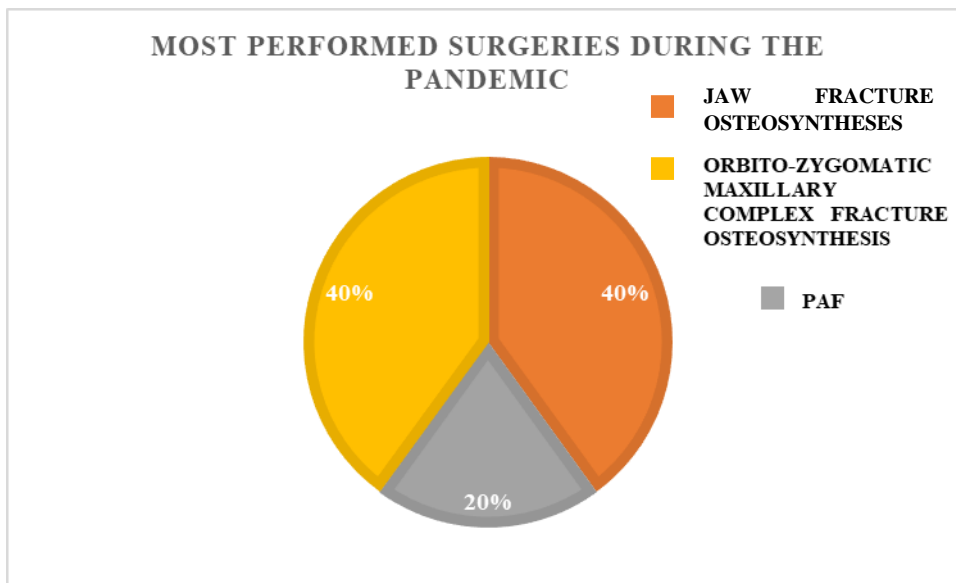


**Graph 11** - Relation of surgeries and the progress of vaccination coverage in Brazil.



Source: Authors (2021).

**Graph 12** - Most performed surgeries so far during the pandemic.



Source: Authors (2021).

Regarding the most performed surgeries in the research period, the most cited were: Osteosyntheses of mandible fracture 40%, osteosyntheses of maxillary orbito-zygomatic complex fracture 40% and perforations by firearms 20% (Graph 12).

#### 4. Conclusion

The results obtained with this research allowed to measure how much this virus brought changes to the reality and routine of hospitals. The first observation falls on the sudden reduction in the number of oral and maxillofacial surgeries, which according to the majority of the participants in this research, exceeded 50% supporting and strengthens the data of the Brazilian Society of integrated care for the traumatized. It is also noteworthy that there were difficulties in the implementation of the field research, regarding the application of questionnaires, which coincided with a critical moment of the pandemic in

the state of Piauí, causing structural changes in the hospital that began to act with 50% of the beds focused on covid-19, which caused a reduction in the number of professionals available to answer the questionnaire. Another relevant point concerns the increase in the number of gun puncture surgeries, a data that needs to be better explored and researched in order to obtain greater answers regarding the motivations related to this and the possible link with the stricter social isolation at the beginning of the pandemic. There is much to be done to improve and reduce the number of infected, more than making the population aware of the risks of this virus, it is also necessary to deal with the mental health of the professional. It is also of paramount importance to offer training and updates to these professionals in order to keep them informed and alert so that even in the midst of adverse situations and difficulties the professional is able to develop strategies that minimize and “soften” the situation. It remains to conclude that even after a year of pandemic, the devastating effect of this virus still persists, embittering 463 thousand deaths in Brazil.

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