

GENERAL HEALTH ANALYSIS OF OLDER AGE PATIENTS WHO WILL BE SUBMITTED TO DENTAL IMPLANTS

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Abstract: The objective of this study is to verify the presence of the main diseases that affect elderly people, such as diabetes, kidney failure and high blood pressure, in patients who will undergo dental implants. This research is characterized as a cross-sectional descriptive study through the analysis of primary data. The target audience was patients treated in the Specialization Course in Implantology at the dental clinic of ``Universidade do Vale do Itajaí`` – UNIVALI, in Itajaí/SC. The sample was non-probabilistic for convenience, consisting of 40 patients, of both sexes, aged 60 (Sixty) years or older. The data collection instrument was a questionnaire with objective questions, related to the patients' health status, applied prior to dental implant surgery. The results showed a low prevalence of kidney disease (8.6%), hypertension (34.3%) and diabetes (11.4%). It was concluded that in the studied sample, the percentage of patients who presented the main diseases evaluated was low: diabetes, renal failure and high blood pressure. However, the professional who will perform the surgical procedure must be attentive to the information collected in the anamnesis, as pre-existing diseases are discovered at this stage and can determine the prognosis of the surgery. To carry out work with great efficiency and quality in the dental field, the professional must see his patient as a human being, he must evaluate his general, emotional and psychological health, and not just his mouth.

Keywords: Surgery, Elderly, Risks

INTRODUCTION

Brazil has lost its characteristics as a young country, becoming an aging country (SCHNEIDER; IRIGARAY, 2008), so it is important that society begins to leave certain stigmas associated with aging in the past, and that professionals are constantly updating themselves with regard to the health of the

elderly (SOUZA et al., 2023)

A new profile of the population's needs is observed due to the high number of people aged 60 or over (MEIRA et al., 2016), leading to a growing demand for health care, including dental services, and adequate care with the oral health (MARTINS et al., 2020). It is estimated that by the year 2025 Brazil will occupy the sixth position worldwide in terms of the elderly population group (BARBOSA et al., 2015). This new reality requires a multidisciplinary care organization that guarantees the well-being of this population (MIRANDA; MENDES; SILVA, 2016).

According to, Schneider; Hirigaray (2008), elderly people's illnesses are chronic and multiple, lasting for several years and requiring constant medical monitoring and continuous medication. In 1998, according to IBGE (Brazilian Institute of Geography and Statistics) data, people over 60 years old invariably presented higher rates of morbidity when compared to other age groups. Whatever the health indicator analyzed, there will be a higher proportion of illnesses and medical procedures among those over 60 years of age, implying greater use of health services, resulting in higher costs. Risk factors include age, sex, availability of a caregiver, self-perceived health, presence of heart disease and diabetes mellitus.

Among the various aspects of health, oral health deserves special attention due to the fact that, historically, dental services have not prioritized attention to this population group (MOREIRA et al., 2002)

In order to cover this entire population, implant dentistry accelerated its development, increasing the possibilities of specific rehabilitative treatment for each patient. Since each individual, after a careful anamnesis, requires a pre-surgical diagnosis, considering all physiological elements, the availability and quantity of bone, mucosa and especially their

general health status must be considered and analyzed.

For Martins et al. (2011) the planning of oral rehabilitation using dental implants is based on its high success rate, which varies around 90%, however for this rate to be achieved it is necessary, in addition to extensive knowledge in the area, a well-informed anamnesis. carried out on the patient's health status, and careful observation of some rules before, during and after the surgical process. Casado et al. (2011) also agree that it is important to pay attention, especially to factors that can influence or alter bone metabolism and the presence of systemic diseases that can significantly interfere with the patient's general health status or their tissue repair process. According to Sandler; Zicardi; Ochs (1995), it is extremely important that the dentist knows the patient's general health and knows which medications and drugs he can use, as these can influence or have repercussions on the surgical treatment for the installation of a dental implant.

According to Mello (2005), implant dentistry is not a simple procedure and when performed on elderly patients, attention must be paid to recovery. The healing process in an elderly person is prolonged, due to a decrease in collagen and a decrease in metabolism in the cell regeneration process. Some complications observed in the elderly are heart failure and coronary occlusion. In patients over 80 (eighty) years of age, a loss of almost 10% of blood can lead to cardiac arrest. Gomes (2006), Da Silva et al. (2022) and Santos (2022) report that in diabetic patients, attention must be doubled so that the disease is controlled, as any change in the glycemic index (hyperglycemia) can generate degenerative complications.

Knowing that diabetes mellitus, renal failure and high blood pressure are the most common diseases in old age, carrying out this work aims to verify the presence of these

diseases, prior to dental implant surgery, warning the professional not to pay attention only to the oral cavity, but also on the patient's general health before starting a surgical procedure.

MATERIALS AND METHODS

This study was previously approved by the UNIVALI Human Research Ethics Committee, under opinion number 2,118,135. It is characterized as a cross-sectional descriptive study using primary data analysis. The target population was patients treated in the Specialization Course in Implantology at the dental clinic of "Universidade do Vale do Itajaí" – UNIVALI, in Itajaí/SC. The sample was non-probabilistic for convenience, consisting of 40 patients, of both sexes, aged 60 (Sixty) years or older, who accepted, of their own free will, to participate in the research by answering the questionnaire and signing the consent form. free informed consent.

The data collection instrument was a questionnaire with objective multiple-choice questions, addressing the main diseases that affect the Brazilian population, applied prior to dental implant surgery.

The questions addressed whether or not the patient had the following diseases: diabetes, kidney failure, hypertension, whether they were currently under medical care, whether they were taking any medication or whether they had any of the diseases questioned; the period of time that has it and lastly was questioned; for which reason the patient sought a dental implant, with aesthetics, chewing function or replacement of the lost tooth, among others, as alternatives.

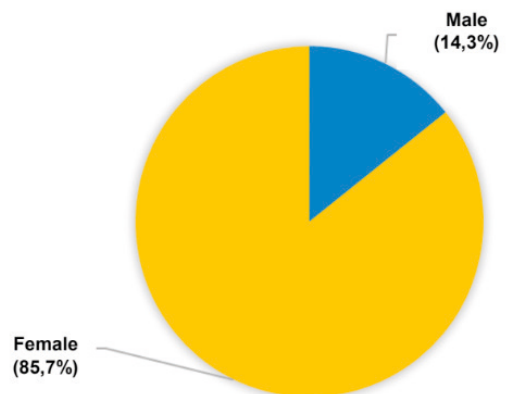
The execution of this work focused on elderly patients, evaluating their general health conditions in aspects related to the factors that we must take care of and analyze before a surgical procedure. The diseases evaluated are those that generally affect patients aged

60 (sixty) years or older, and the relationship with the surgical process of dental implant placement is discussed based on updated literature on the proposed topic.

The collected data was organized, and later the relative frequency was calculated, and presented in the form of graphics.

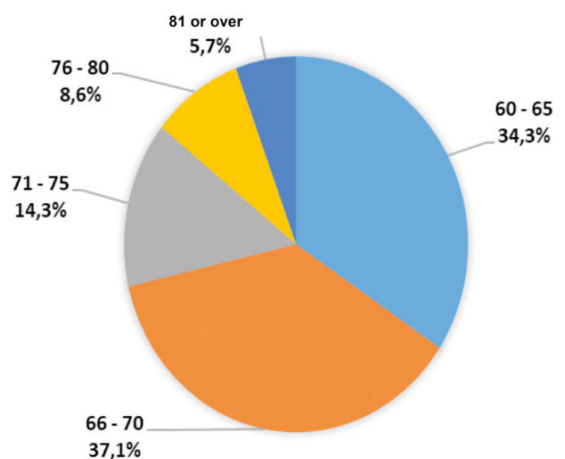
RESULTS

The sample of this study consisted of 40 participants and the results are presented below in the form of graphics.



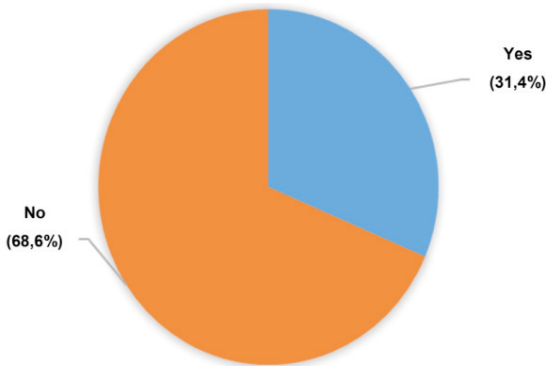
Graphic 1 – Distribution of the relative frequency of the sample according to gender.

Source: survey data



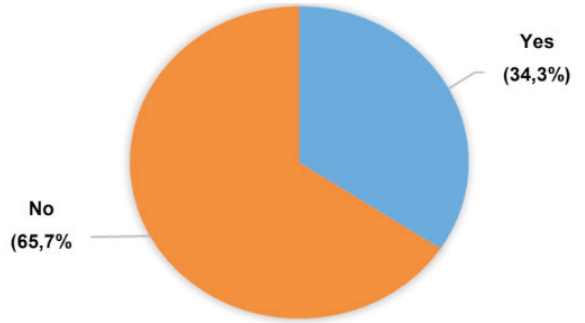
Graphic 2 – Distribution of the relative frequency of the sample according to age group.

Source: survey data



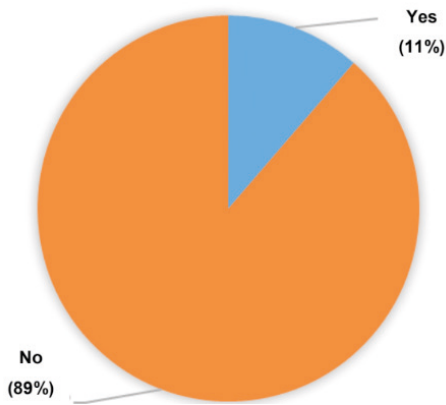
Graphic 3 – Distribution of the relative frequency of any health problem.

Source: survey data



Graphic 6 – Distribution of the relative frequency of the sample regarding the presence of arterial hypertension.

Source: survey data



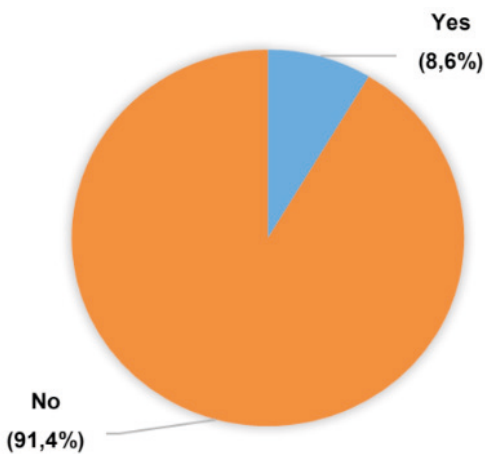
Graphic 4 – Distribution of the relative frequency of the sample regarding the presence of diabetes.

Source: survey data



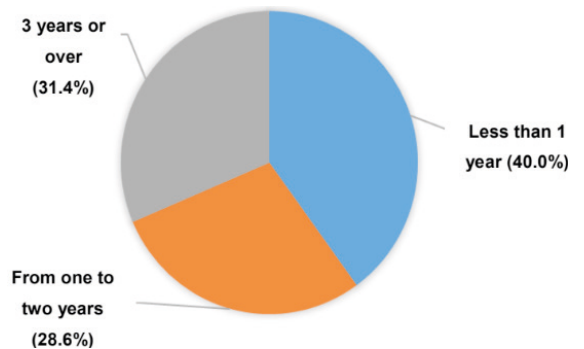
Graphic 7 – Distribution of the relative frequency of the sample regarding whether they use any medication.

Source: survey data



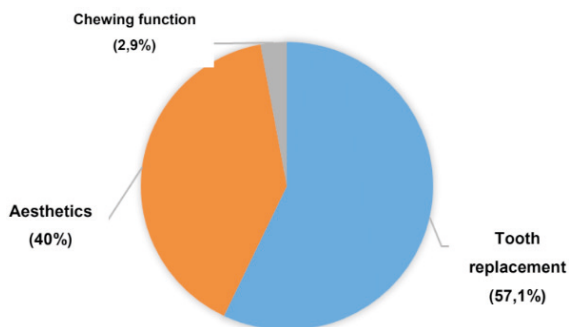
Graphic 5 – Distribution of the relative frequency of the sample regarding renal failure.

Source: survey data



Graphic 8 – Distribution of the relative frequency of time that the patient treats illnesses.

Source: survey data



Graphic 9 – Distribution of the relative frequency of the reason why people sought dental implants.

Source: survey data

DISCUSSION

In the 21st century, Brazil is considered the country of edentulous people, the DMFT rate for the age group of patients between 65 and 74 years old is very high, that is, for every four elderly people, three do not have teeth in their mouths. Based on these data and the need to replace the lost dental element, dental implants have become a rehabilitation alternative, providing greater support, retention, stability and comfort for the patient in chewing function and aesthetic harmony.

Dental implant surgery can be performed on any individual, even if they are elderly. This study evaluated the main health problems that affect elderly patients, such as diabetes, hypertension and kidney failure, diseases prevalent in elderly patients. When evaluating a patient over 60 (sixty) years of age, with any of the diseases mentioned, the necessary care must be taken in each case. If the disease is controlled, that is, medication or necessary care is being taken to balance blood levels, the procedure can be carried out with the authorization of the doctor responsible for the case and care with the dental clinical conduct with the patient is of extreme importance.

For Colussi and Freitas (2002); Moreira (2002); Veras (2003), the DMFT in patients up to 59 years old was 86% in 1986, assuming

that life expectancy nowadays reaches 68 years old, and with technological advances in dentistry, implant dentistry has become a treatment option for elderly patients, rehabilitating lost dental elements, where total edentulism is present in a large part of the elderly population, regardless of sex.

Systemic conditions such as diabetes mellitus, osteoporosis, periodontitis, immunodeficiency, cardiovascular disease, cancer and changes in salivary flow, these pathologies, when controlled, do not present risks to dental implant surgery, however, when untreated, they are considered contraindications to treatment (LEVANDOSKI, 2019)

In this study, when general health problems were investigated, it was found that the majority of interviewees did not have general health complications. This makes it possible to perform dental implant surgery without needing specific care. According to Mello (2005), implant dentistry is not a simple procedure and when performed on elderly patients, attention must be paid to recovery. The healing process in an elderly person is prolonged, due to a decrease in collagen and a decrease in metabolism in the cell regeneration process. Some complications observed in the elderly are heart failure and coronary occlusion. In patients over 80 (eighty) years of age, a loss of almost 10% of blood can lead to cardiac arrest.

In the case of patients with Diabetes mellitus, a disease that affects the metabolism of blood sugar, although few of the patients interviewed have the disease, extra care must be taken as there is an alteration in the healing process, due to high levels of glucose in the bloodstream. blood pressure, which results in the hardening of arteries and blood vessels, making blood circulation difficult. With the narrowing of these blood vessels, there is a decrease in blood flow and a lack

of oxygenation in the peri-implant region, reducing the function of red cells to transport nutrients to the tissue. Also resulting in a decrease in white blood cells, which have the function of fighting infections. Therefore, healing without nutrients and oxygen will not take its correct course of healing (GOMES, 2006; GONÇALVES, 2011). According to Pacheco (2019), geriatric diabetic patients have implant success rates similar to individuals without the disease, as long as they have good metabolic control. There is no scientific evidence that diabetes is a contraindication for rehabilitation with implants. However, it is essential to control blood glucose levels before and after implant placement. Besides, Alsahhaf et al. (2019), highlights that diabetes has no contraindication for dental implants. But prior treatments are necessary to avoid the risk of failure (ABDULJABBAR et al., 2019).

Another disease addressed in the research was kidney failure. The number of elderly people with kidney failure was low in the present study. These patients are susceptible to decreased renal function due to the physiological decline in glomerular filtration (FG) with advancing age. Other diseases such as diabetes mellitus and high blood pressure may be factors in renal impairment. The professional must request an assessment of the disease, which is important in some clinical situations, such as the patient's use of medications before or after the surgical procedure, such as: analgesics, anti-inflammatories, antibiotics. The surgeon's role in this case must be to take care of the medication prescription, due to their metabolism. In this case, one must not prescribe a medicine that will remain in circulation for a long time, since the kidney is the organ responsible for blood filtration, and this patient has it weakened and reduced (GUEVARA et al., 2014).

Of the participants in this study, 34.3% have

high blood pressure, these people need special care when undergoing a surgical procedure. When an individual has hypertensive decompensation, numerous complications occur, and the greatest risk is blood pressure spikes during implant surgery. When the pressure rises, target organs are affected: such as the heart, brain and lungs, making heart attacks or strokes more likely to occur. The dentist's observation for these patients concerns the choice of the anesthetic solution. According to some authors, the anesthetic solution that contains a vasoconstrictor agent provides a longer duration of anesthesia, promotes less toxicity and provides better local hemostasis. In patients with arterial hypertension, care must be taken when choosing the anesthetic solution. Malamed (2013)

According to Volpato; Andrade; Ranaldi (2014), the first-choice vasoconstrictor in dental use is epinephrine, it is known that it promotes constriction of the arteriolar and venous network vessels in the area that was injected and after its absorption into the bloodstream, it interacts with receptors located in the heart, increasing heart rate and oxygen consumption. The choice of epinephrine as a vasoconstrictor also produces dilation of the coronary arteries, increasing coronary blood flow. The higher the dose injected, the greater the risk of this patient having hypertension during care. Therefore, it is observed that the effects of epinephrine in hypertensive patients depend on the dose, quantity and route of administration, therefore, small doses result in a small or no change in blood pressure.

Epinephrine is not contraindicated in hypertensive patients, with the disease under control, but its dosage must be limited. The maximum recommended amount for this vasoconstrictor is 0.04 mg per treatment session, remembering that a 1.8 ml tube contains 0.018 mg with a concentration of

1:100,000, and 0.009 mg if the concentration is 1:200,000 (MALAMED, 2013)

It is known that elderly patients use daily medications. This research shows that almost half of patients use some medication, where a careful anamnesis must be taken and care must be taken related to the surgical procedure and be aware of possible drug interactions, due to the prescribed medication, which may result in different effects of the two agents. data individually (VERAS, 2003; SANDLER; ZICARDI; OCHS, 1995).

According to Andrade; Ranali (2011), the result of a drug interaction can increase or decrease the effects of one or two active ingredients of a medication already in use, or both promote the appearance of a new effect of the active ingredients alone. Therefore, the patient must inform if they are already taking any medication, to avoid complications in their body, and alert the surgeon to carry out adequate planning before surgery. Examples of medications where interactions may occur are antacids, they can alter the dissolution and absorption rates of medications such as antibiotics: tetracycline and anti-inflammatories: aspirin, diclofenac and ibuprofen. Or anticoagulants, warfarin, these can pose a greater risk and cause bleeding if used with some anti-inflammatories, in addition to resulting in healing complications.

To maintain control of diabetes mellitus and hypertension, these patients use some daily medication, and the professional must pay attention to their health status and disease progression and its relationship with the medication (SOUZA; SOARES, 2018). In daily clinical medicines mentioned above, such as antacids and tetracycline are rarely used, including aspirin, which is replaced by paracetamol and dipyron. Anticoagulants are specific for patients with hematological disorders such as deep vein thrombosis and users of valve prostheses. To this end, today

the evaluation of the INR (International Normality Ratio) guarantees us security regarding the risks of hemorrhage, in addition to local hemostasis care (ANDRADE; RANALI, 2011). It is also important to know whether an elderly patient's illnesses are under control. This will provide a better prognosis and choice of the most appropriate treatment. A patient being compensated includes the correct use of their medications, and if they contribute to controlling the disease, the patient can normally undergo dental surgery (VERAS, 2003).

People over 60 years of age are susceptible to the increase in chronic degenerative diseases and several factors may be associated with this frequency, examples of this are lifestyle, addictions, risky sexual behavior, not being careful with diet, genetic predisposition and lack of exercises. With the presence of these diseases, these patients increase the use of medication. For their assessment, it is necessary to know the reality of the elderly, paying attention to their health status and the progression of the disease and its relationship with the medication. (DINIZ et al., 2017; SOUZA; SOARES, 2018).

In this study, the length of time patients were under treatment for the most commonly prevalent diseases was verified. The majority of these patients have been undergoing treatment for less than a year, but they maintain control of them, and they are compensated, so to prevent the worsening of these diseases during a dental procedure, it is up to the dentist to carry out health education plans focusing on actions promotion and prevention. The others treat the disease for longer, being aware of what deviating from their control can lead to, but in the same way, prevention and health education must persist.

Old age encompasses several concepts, which are characterized when the individual reaches their 60s (SCHNEIDER; IRIGARAY,

2008). With improvements in health, the elderly population has increased, looking for more dental treatment alternatives and with this dental implant surgery is increasing in the dental market. It is noted that a low rate of interviewees sought a dentist due to the desire for an aesthetic establishment. Nowadays there are several treatment alternatives, and the most used are various types of implants under prostheses, in the case of total or partial edentulous patients (SILVA, 2010). However, the majority of those interviewed require replacement of the lost element, as they spend a long time without it or using prostheses. Patients requiring something comfortable and safe sought implantology for the rehabilitation of chewing function. Cavalcanti et al. (2011), report that in all cases of patients with the absence of a dental element, implant dentistry comes with the aim of benefiting the patient, rehabilitating them orally, functionally and aesthetically.

Dutta et al. (2020) highlight the importance of carrying out a well-done clinical examination, a careful anamnesis to provide a good quality of life for the patient before and after dental implant therapies. Chevalier (2029) also states that dental implants in the elderly can have similar success to that found in younger patients compared to osteointegration. However, to achieve successful treatment that brings a good quality of life to elderly patients rehabilitated

with implants, it is essential to carry out a careful anamnesis, appropriate clinical and complementary exams and individualized planning for each case.

It is important that the professional knows the patient's history, this way they will have a better result. The elderly's health must involve all types of care, from educational actions, health promotion, prevention of serious and/or chronic diseases and rehabilitation of illnesses. With several professionals having this objective, the elderly will have a healthy aging, not only bringing benefits to them, but quality and sustainability for the family and the health system (VERAS; OLIVEIRA, 2018).

CONCLUSION

In the present study it was concluded that:

1. The percentage of patients presenting the main diseases assessed - diabetes, renal failure and high blood pressure - is low;
2. The professional must be attentive to the information in the anamnesis, as at this stage pre-existing diseases are discovered that can determine the prognosis of the surgery;
3. To carry out effective and quality work, the professional must have a humanistic vision, look at general, emotional and psychological health - and not just diseases of the oral cavity.

REFERENCES

- ABDULJABBAR, T. *et al.* Relationship between self-rated pain and peri-implant clinical, radiographic and whole salivary inflammatory markers among patients with and without peri-implantitis. **Clin Implant Dent Relat Res.**, Hamilton, v.21, n.6, p.1218-1224, 2019.
- ALSAHHAF, A. *et al.* Comparison of yeast species in the subgingival oral biofilm of individuals with type 2 diabetes and peri-implantitis and individuals with peri-implantitis without diabetes. **J Periodontol**, Indianápolis, v. 90, n.12, p.1383-1389, 2019.
- ANDRADE, E.D; RANALI, J. Emergências médicas em Odontologia. **Artes Médicas**, São Paulo, ed. 3, p.113-117. 2011.
- BARBOSA L.N.F. *et al.* Neuropsicologia e perspectivas para o cuidado integral de idosos. **Saúde do Idoso: uma abordagem multidisciplinar**, p. 215-234, 2015.
- CASADO, P. L. *et al.* Tratamento das doenças peri-implantares: experiências passadas e perspectivas futuras. Uma revisão de literatura. **Braz J Periodontol**, Maringá, v. 21, n.2, p. 25-35, 2011.
- CAVALCANTI, Y. W. *et al.* Determinação do nível de evidência científica de artigos sobre prótese total fica implanto-suportada. **Rev. Brasileira de Ciências da Saúde**, João Pessoa, v.14, n.4, p. 45-50, 2011.
- CHEVALIER, A.L.N. Implante Dentário em idosos: revisão de literatura. **Brasília Med.**, Brasília, v.52, n.2, p.66-71, 2015
- COLUSSI, C. F; FREITAS, S. F. T. de. Aspectos epidemiológicos da saúde bucal do idoso no Brasil. **Cad. Saúde Pública**, Rio de Janeiro, v.18, n.5, p.1312-1320, 2002.
- DA SILVA, E.R. *et al.* Diabetes Mellitus e suas implicações na osseointegração de implantes dentários: revisão sistematizada da literatura. **Arch. Health Inv.**, [s.l.], v.11, n.1, p.113-117, 2022.
- DINIZ, L.L. *et al.* Prevalência de doenças gástricas não-infecciosas em idosos. **Mostra Científica da Farmácia**, [s.l.], v.3, n.1, 2017.
- DUTTA, S. R. *et al.* Risks and complications associated with dental implant failure: Critical update. **Natl J Maxillofac Surg.**, online, v.11, n.1, p.14-19, 2020.
- GOMES, M. B. Prevalência de sobrepeso e obesidade em pacientes com diabetes mellitus do tipo 2 no Brasil. **Arquivo Brasileiro de Endocrinologia e Metabolismo**, São Paulo, v.50, n. 1, p.136-144, 2006.
- GONÇALVES, R. *et al.* A característica genética influencia na sobrevida do implante dentário. **Revista Periodontia**, Rio de Janeiro, v.21, n.3, p.33-39, 2011.
- GUEVARA, H.G. *et al.* Manejo odontológico em pacientes com doença renal crônica. **Rev. Bras. ciênc. saúde**, João Pessoa, v.12, n.40, p.74-81, 2014.
- LEVANDOSKY, J.T. **Reabilitação oral com implantes em pacientes idosos**. 2019. 106 f. Dissertação (Mestrado Integrado em Medicina Dentária) Instituto Universitário Egas Moniz, Almada –Portugal. 2019.
- PACHECO, M.A.V.S.S. **Implantologia no paciente geriátrico**. 2019. 36f. Dissertação de Mestrado.Universidade Fernando Pessoa, Porto-Portugal. 2019.
- MALAMED, S. Manual de anestesia local. **Elsevier**, Rio de Janeiro, ed.6, p.39-52, 2013.
- MARTINS, A.M.E.B.L. *et al.* Uso de serviços odontológicos públicos entre idosos brasileiros: uma análise multinível. **Ciênc Saúde Colet.**, Rio de Janeiro, v.25, n.6, p. 2113-26, 2020.
- MARTINS, V. *et al.* Osseointegração: análise de fatores clínicos de sucesso e insucesso. **Rev. Odontol. Araçatuba**, Araçatuba, v.32, n.1, p.26-31, 2011.

- MEIRA, I. A. *et al.* Multidisciplinaridade no cuidado e atenção à saúde bucal do idoso. **Rev Ciênc Méd.**, Campinas, v.27, n.1, p.39-45, 2018.
- MIRANDA, G.M.D.; MENDES, A.C.G.; SILVA, A.L.A. O envelhecimento populacional brasileiro: desafios e consequências sociais atuais e futuras. **Rev Bras Geriatr Gerontol.**, Rio de Janeiro, v.19, n.3, p. 507-519, 2016.
- MELLO, H. S. A. Cirurgia odontológica na terceira idade. **Odontogeriatrics**, São Paulo, cap. 16, p. 211 – 216, 2005.
- MOREIRA, R. da S. *et al.* A saúde bucal do idoso brasileira: revisão sistemática sobre o quadro epidemiológico e acesso aos serviços de saúde bucal. **Cad. Saúde Pública**, Rio de Janeiro, v.21, n. 6, p. 1665-1675, 2002.
- SANDLER, N.A.; ZICARDI, V.; OCHS, M. Differential diagnosis of jaw in the elderly. **J Am Dent Assoc.**, Pittsburgh, v.12, n.9, p.1.263 – 1.271, 1995.
- SANTOS, A.N. **Osteointegração dos implantes dentários em pacientes diabéticos**. 2022. 37p. Dissertação conducente ao Grau de Mestre em Medicina Dentário (Ciclo Integrado), Instituto Universitário de Ciências da Saúde, Gandra.2022.
- SCHNEIDER, R.H.; IRIGARAY, T.Q. O envelhecimento na atualidade: aspectos cronológicos, biológicos, psicológicos e sociais. **Estud.psicol**, Campinas, v.25, n.04, p.585-593, 2008.
- SILVA, M.A.B. *et al.* Associação entre implantes odontológicos e próteses parciais removíveis: revisão de literatura. **RSBO**, Joinville, v.8, n.1, p. 97-101, 2010.
- SOUZA, J.C.P. O envelhecimento sob a perspectiva da sociedade contemporânea brasileira. **Contribuciones a Las Ciencias Sociales**, São José dos Pinhais, v.16, n.11, p.25514-25526, 2023.
- SOUZA, R.D.de; SOARES, D.J. **Atenção farmacêutica na saúde do idoso**. Trabalho de Conclusão de Curso (Especialização em Saúde da Família) - Instituto de Ciências da Saúde, Universidade da Integração Internacional da Lusofonia Afro-Brasileira, São Francisco do Conde, 2018.
- VERAS, R. Em busca de uma assistência adequada à saúde do idoso: revisão de literatura e aplicação de um instrumento de detecção precoce e de previsibilidade de agravos. **Cad. Saúde Pública**, Rio de Janeiro, v.19, n.3, p. 705-715, 2003.
- VERAS, R.P.; OLIVEIRA, M. Envelhecer no Brasil: a construção de um modelo de cuidado. **ABRASCO**, Rio de Janeiro, v.23, n.6, p. 1929-1936, 2018.
- VOLPATO, M.C.; ANDRADE, E.D.; RANALI, J. Anestesia local. In: Andrade ED. *Terapêutica medicamentosa em odontologia*. **Artes Médicas**, São Paulo, ed.3, p.30-41, 2014.