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**AVALIAÇÃO LONGITUDINAL DA CONDIÇÃO PERIODONTAL DE
INDIVÍDUOS TRATADOS/RETRATADOS**

Dissertação de Mestrado

Santa Maria, RS
2016

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TRATADOS/RETRATADOS

Dissertação apresentada ao curso de Mestrado do Programa de Pós-Graduação em Ciências Odontológicas, Área de concentração em Odontologia, ênfase em Periodontia, da Universidade Federal de Santa Maria (UFSM, RS), como requisito parcial para obtenção do grau de **Mestre em Ciências Odontológicas**.

Orientador: Prof. Dr. Carlos Heitor Cunha Moreira

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O temor do Senhor é o princípio da sabedoria
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RESUMO

AVALIAÇÃO LONGITUDINAL DA CONDIÇÃO PERIODONTAL DE INDIVÍDUOS TRATADOS/RETRATADOS

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ORIENTADOR: Carlos Heitor Cunha Moreira

Periodontite é uma doença infecto-inflamatória que acomete os tecidos de suporte dos dentes e uma das principais responsáveis por perdas dentárias. Seu tratamento consiste na raspagem e alisamento radicular associado à medidas de higiene bucal adequadas, com objetivo de reduzir os níveis de inflamação periodontal. Estabilidade dos níveis de inserção é um dos maiores objetivos a serem alcançados após a conclusão do tratamento periodontal. Embora a efetividade do tratamento periodontal e da cooperação com a manutenção periódica preventiva (MPP) estejam bem estabelecidas na literatura, pouco se sabe sobre as condições periodontais e o acompanhamento de indivíduos atendidos no serviço filantrópico. O objetivo do presente estudo foi avaliar longitudinalmente a condição periodontal de indivíduos tratados/retratados em uma unidade de serviço filantrópico. Inicialmente, 77 indivíduos foram avaliados, em média, 3,5 anos após o tratamento periodontal. Dados demográficos e socioeconômicos foram coletados por meio de uma entrevista estruturada. Os parâmetros periodontais avaliados foram Índice de Placa (IPI), Índice Gengival (IG), Profundidade de Sondagem (PS), Nível de Inserção Clínica (NIC) e Sangramento à Sondagem (SS). Indivíduos que apresentaram altas porcentagens de sangramento à sondagem ($\geq 25\%$) foram encaminhados para retratamento. O exame final foi realizado, em média, 2,4 anos após o retratamento e os indivíduos foram categorizados em três grupos: não receberam tratamento odontológico (NTOd); receberam tratamento odontológico, exceto periodontal (TOd); receberam retratamento periodontal (RPeriod). O grupo RPeriod apresentou menor média de IG quando comparado ao grupo NTOd ($P < 0,05$), porém, manteve altas porcentagens de SS. As médias de IPI, PS, SS e NIC, assim como a progressão da doença, não diferiram entre os três grupos ($P \geq 0,05$). Apesar da possibilidade de acesso a um serviço filantrópico sem custo, os indivíduos que foram retratados nesse serviço não apresentaram alterações significantes na porcentagem de sítios com SS e com $PS \geq 5\text{mm} + \text{SS}$. Esses resultados podem estar relacionados ao fato de que esses indivíduos não retornaram para realizar MPP de maneira regular e de forma personalizada.

Palavras-chave: Condição Periodontal. Progressão de Perda de Inserção. Retratamento Periodontal. Tratamento Periodontal.

ABSTRACT

LONGITUDINAL EVALUATION OF PERIODONTAL CONDITION OF INDIVIDUALS TREATED/RETREATED

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Periodontitis is inflammatory and infectious disease on attachment tissue of teeth and it is one of principal reason for tooth loss. Periodontal treatment consists on scaling and root planning associate with high standard oral hygiene with aim of reduce periodontal inflammation levels. Stability of attachment levels is a major aim to be achieved after periodontal treatment conclusion. Although periodontal treatment effectivity and need in cooperate with supportive periodontal treatment (SPT) be well established in literature, a little is known about periodontal status and follow-up of individuals who use philanthropic service. The aim of this study was to evaluate periodontal status of individuals treated/retreated on a philanthropic service. At first, 77 individuals who did periodontal treatment after a mean of 3.5 years were evaluated. Demographic and socioeconomic data were collected by structured interview. Periodontal variables evaluated were: Plaque Index (PII), Gingival Index (GI), Probing Depth (PD), Clinical Attachment Level (CAL) and Bleeding on Probing (BoP). Individuals who showed high percentage of BoP ($\geq 25\%$) were lead to retreatment. The final exam was done, in mean, 2.4 years after retreatment and individuals were categorized on three groups: did not receive any dental retreatment (NDentT); received some dental treatment, except periodontal (DentT); and those who received periodontal retreatment (PerioRT). The group which received periodontal retreatment had lower GI mean when compared with group that did not receive any dental treatment ($P < 0.05$), however, they stayed with high BoP percentages. Mean of PII, PD, BoP and CAL were not different among groups ($P \geq 0.05$). It was not observed difference on disease progression among the groups ($P \geq 0.05$). Although individuals have possibility of a free dental treatment, those who were retreated at this place showed no significant changes on BoP percentage and $PD \geq 5\text{mm}$ with BoP percentage. These results may be related to the fact patients did not return to do regular and individualized STP.

Keywords: Periodontal Retreatment. Periodontal Status. Periodontal Treatment. Progression of Attachment Loss.

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1 INTRODUÇÃO

As doenças periodontais têm alta prevalência e são uma das principais responsáveis pelas perdas dentárias em âmbito mundial (SUSIN et al., 2004; KASSEBAUM et al., 2014; OPPERMANN et al., 2015; EKE et al., 2015). As periodontites são doenças infecto-inflamatórias que acometem os tecidos de suporte dos dentes resultando em destruição dos tecidos de inserção (PAGE; KORNMAN, 1997; HAYASHI et al., 2010). A periodontite crônica, forma mais comum de periodontite, é mais prevalente em adultos e está associada ao acúmulo de placa e cálculo na superfície dos dentes. Seu início pode ocorrer a qualquer tempo, no entanto, como sua taxa de progressão é lenta, torna-se clinicamente significativa por volta dos 30 anos, ou mais tarde, sendo seu pico de prevalência por volta dos 40 anos de idade (KASSEBAUM et al., 2014).

Por se tratar de uma doença de caráter polimicrobiano, endógeno e associado à formação de biofilme, o tratamento da periodontite torna-se complexo. A terapia efetiva para essa doença baseia-se no controle mecânico dos micro-organismos causais. Assim, o tratamento padrão-ouro para as periodontites consiste na raspagem e alisamento radicular e na obtenção de medidas de higiene bucal adequadas, tendo como objetivo níveis bastante reduzidos de inflamação periodontal (DRISKO, 2014). A efetividade desse tratamento está bem estabelecida na literatura pela demonstração de ganhos de inserção, reduções nas profundidades de sondagem e reduções nas frequências de sangramento à sondagem (SANZ et al., 2012).

No entanto, o tratamento convencional sozinho não previne a progressão da doença. Além do adequado tratamento, é preciso implementar um programa de prevenção, com retornos periódicos, baseado nas necessidades clínicas individuais, que estimule hábitos relacionados à saúde, a fim de manter a saúde periodontal obtida no tratamento e evitar futura perda dentária (AXELSSON; NYSTROM; LINDHE, 2004). Mesmo sendo parte integrante do tratamento, a implementação de um programa de manutenção, muitas vezes, é negligenciada tanto em atendimentos públicos quanto em privados. Os principais objetivos da manutenção periódica preventiva incluem monitoramento clínico das condições periodontais, revisão radiográfica, medidas de controle de placa, reforço de higiene bucal e reavaliação do histórico médico e dental,

visando assim, prevenir e minimizar a recorrência da doença, prevenir ou reduzir a perda dental e aumentar a probabilidade de diagnóstico e tratamento de doença recorrente e/ou outras doenças bucais em tempo hábil (COHEN, 2003; SHUMAKER et al., 2009).

Axelsson e Lindhe (1978) avaliaram o efeito a longo prazo de um programa de prevenção baseado em medidas de controle de placa profissional e autorrealizada. Nesse estudo, indivíduos do grupo teste participaram do programa de prevenção, com retornos periódicos, enquanto os indivíduos do grupo controle receberam tratamento convencional uma vez ao ano. Após seis anos, os autores observaram que o tratamento dentário convencional realizado pelo grupo controle não preveniu a progressão de doença periodontal. Os indivíduos apresentaram sítios com perda de inserção adicional variando de 0,13 a 0,26 mm, enquanto os indivíduos do grupo teste mantiveram os sítios estáveis ou ganharam inserção (AXELSSON; LINDHE, 1981). O grupo controle foi interrompido e o grupo teste continuou com chamadas de acordo com suas necessidades individuais. Após 30 anos de acompanhamento, o grupo teste mostrou uma incidência muito baixa de doença periodontal, assim como, de perda dentária. Os indivíduos apresentaram pequena perda de inserção clínica em face livre (0,2mm) e ganho de inserção em faces interproximais em torno de 0,3 a 0,5mm (AXELSSON; NYSTROM; LINDHE, 2004). Estes estudos mostram a efetividade da implementação de um programa de prevenção após o tratamento.

Outros estudos têm demonstrado a importância da cooperação regular com a terapia de manutenção, mostrando melhores resultados para indivíduos que cooperam regularmente quando comparados àqueles que cooperam de maneira irregular. Indivíduos que cooperam regularmente com a terapia de manutenção após o tratamento periodontal apresentam menor progressão de periodontite e um nível muito baixo de perda dentária (KOCHER et al., 2000; FARDAL; JOHANNESSEN; LINDEN, 2004; FISHER et al., 2008; LORENTZ et al., 2010; COSTA et al., 2011) comparados com indivíduos que não cooperam com a terapia regularmente (CHECCHI et al., 2002; COSTA et al., 2011). Wilson et al. (1987) mostraram que indivíduos que não cooperaram adequadamente com a manutenção apresentaram taxa anual de perda dentária de 0,06 dentes/ano, enquanto cooperadores regulares não perderam dentes no período do estudo. A ausência de manutenção após o tratamento periodontal foi associada a

recidivas da doença e taxas significativamente mais elevadas de perda dentária (BECKER; BECKER; BERGE, 1984; KOCHER et al., 2000).

A perda dental reflete a funcionalidade da dentição, e quanto maior o número de unidades oclusais perdidas, maior o prejuízo funcional. Estudos mostram que para haver uma capacidade adaptativa do sistema estomatognático, deve haver pelo menos quatro unidades oclusais funcionais simetricamente (KAYSER, 1981, 1994). O número reduzido e a má distribuição estratégica dos dentes, agravado por sua inserção reduzida e mobilidade aumentada, prejudicam o equilíbrio de distribuição das forças e a estabilidade oclusal, além disso, a perda de dentes anteriores também causará prejuízos estéticos e fonéticos, o que pode impactar na qualidade de vida do indivíduo. Por isso, esforços devem ser feitos para reduzir a taxa de perda dentária em indivíduos com periodontite, oferecendo a eles um acompanhamento adequado após realizado o tratamento periodontal.

Vários fatores podem aumentar o risco para progressão de doença periodontal durante a fase de manutenção. A necessidade de reintervenção ou retratamento durante a fase de manutenção está relacionada com a suscetibilidade à doença periodontal e com o risco de reinfecção e progressão das lesões periodontais. Havendo progressão de perda de inserção, a reintervenção deve ser imediata. Uma variedade de fatores, nos níveis sítio, dente e indivíduo, têm sido associados ao aumento do risco para a progressão da doença.

No nível sítio, o acúmulo de placa na superfície dentária está relacionado à inflamação do tecido gengival, e unidades dentogengivais consistentemente inflamadas mostraram maior progressão de perda de inserção ao longo do tempo (LANG; SCHATZLE; LOE, 2009). Além disso, a presença de bactérias do complexo vermelho e laranja na composição da placa bacteriana subgengival está intimamente relacionada com a doença periodontal, e a elevação dos níveis dessas bactérias aumenta as chances de progressão da doença (MACHTEI et al., 1997; SOCRANSKY et al., 1998; BYRNE et al., 2009).

A presença de supuração no sítio aumentou o valor preditivo positivo para a progressão da doença em combinação com outros parâmetros clínicos, como sangramento à sondagem e aumento da profundidade de sondagem. Porém, a

supuração não é um achado frequente (BADERSTEN; NILVÉUS; EGELBERG, 1990; CLAFFEY et al, 1990). Presença de sangramento à sondagem (SS) representa um processo inflamatório local e um preditor para perda de inserção futura. O aumento da frequência de SS pode aumentar a probabilidade de progressão da doença periodontal (CLAFFEY et al, 1990; RAHARDJO et al., 2005), sendo a sua ausência, um forte indicador de estabilidade periodontal com um valor preditivo negativo de 98% (LANG et al., 1990). Embora não haja um nível estabelecido de prevalência de SS acima do qual se tenha estabelecido um maior risco de recorrência da doença, a prevalência de 25% foi o ponto de corte entre indivíduos que mantiveram estabilidade periodontal por quatro anos e indivíduos com recidiva da doença no mesmo período de tempo. Assim, indivíduos com SS acima de 25% devem ser considerados de alto risco para a destruição periodontal, enquanto indivíduos com porcentagens abaixo de 10% podem ser considerados de baixo risco para recorrência da doença (LANG et al., 1990; LANG; TONETTI, 2003)

A presença de altas frequências de bolsas residuais profundas ($PS \geq 5\text{mm}$) e o aumento da profundidade de bolsas durante a manutenção, também têm sido associados com maior risco de progressão da doença (BADERSTEN; NILVÉUS; EGELBERG, 1990; CLAFFEY et al., 1990; MATULIENE et al., 2008). Assim, indivíduos com até quatro bolsas residuais com $PS \geq 5\text{mm}$ podem ser considerados como de risco relativamente baixo, enquanto que indivíduos com mais de oito bolsas residuais devem ser considerados de alto risco para recorrência da doença (LANG; TONETTI, 2003).

No nível dente, a presença de lesões de furca grau II ou III e a presença de restaurações com sobrecontorno e margens de coroas mal adaptadas na área subgingival aumentam o risco para a progressão de doença periodontal. Isso pode ser explicado pela maior dificuldade de acesso aos procedimentos de tratamento (NIBALI et al., 2016; SALVI et al., 2014), além de áreas retentivas de placa fornecerem condições favoráveis para o estabelecimento de microbiota anaeróbica gram-negativa (LANG; KIEL; ANDERHALDEN, 1983).

Segundo Lang e Tonetti (2003) a perda de dentes deve ser incorporada na avaliação de risco dos indivíduos, uma vez que representa o ponto final de uma doença oral ou trauma. Indivíduos com até quatro dentes perdidos podem ser considerados como

de baixo risco para recorrência de periodontite, enquanto que se mais de oito dentes a partir de um total de 28 são perdidos, os indivíduos devem ser considerados de alto risco.

No nível do indivíduo, autores demonstraram que cerca de metade da variância da doença na população pode ser atribuída à variação genética. Eles estimaram a variância genética e ambiental para a periodontite utilizando dados de gêmeos criados juntos e concluíram que a variância genética foi estatisticamente significativa para a gravidade e extensão da doença (MICHALOWICZ et al., 2000).

Estudos mostraram diferenças na suscetibilidade à doença entre indivíduos. Mesmo sem diferenças quantitativas ou qualitativas no acúmulo de placa, podem haver diferenças significativas na resposta inflamatória do tecido gengival, resultando em diferenças na gravidade da doença. O que sugere que a resposta inflamatória dos tecidos gengivais ao acúmulo de placa é uma peculiaridade individual possivelmente dependente de fatores relacionados ao hospedeiro (TROMBELLI et al., 2004).

Além disso, o estresse, revelado como tensão financeira, e a depressão foram associados com maior gravidade da doença periodontal, avaliada por níveis mais elevados de perda de inserção clínica e perda óssea alveolar (GENCO et al., 1999). Outros autores também relataram que o estresse ocupacional (pior satisfação com o trabalho) e a condição socioeconômica mais baixa previram a progressão de periodontite (LINDEN; MULLALLY; FREEMAN, 1996). Em um estudo realizado em ratos, os autores demonstraram que a depressão experimental induzida acelerou a destruição periodontal; e o tratamento farmacológico da depressão, atenuou essa destruição (BREIVIK et al., 2006).

Outros fatores como sexo masculino e aumento da idade também foram associados com maior risco de progressão da doença periodontal (HAAS et al., 2012, 2014). Tabagismo e diabetes foram amplamente investigados e são considerados fatores de risco clássicos para o início e progressão das periodontites (MACHTEI et al., 1999; SCHATZLE et al., 2010; COSTA et al., 2011, 2013; HAAS et al., 2014; CHRYSANTHAKOPOULOS, 2015). O diabetes foi associado com a progressão de periodontite em indivíduos que não cooperaram com a manutenção regularmente (COSTA et al., 2011). E, diabéticos com pobre controle glicêmico apresentaram maior

progressão de periodontite e perda dentária comparados com indivíduos com bom controle glicêmico ou não diabéticos (COSTA et al., 2013).

Condição socioeconômica e escolaridade também influenciam a progressão da periodontite e perda dental. Estudos relataram que indivíduos com níveis socioeconômicos e educacionais mais baixos apresentam maior risco de perda de inserção quando comparados com indivíduos com níveis mais altos (SUSIN et al., 2004; HAAS et al., 2012, 2014; CHRYSANTHAKOPOULOS, 2015). Indivíduos que realizaram a manutenção em clínicas privadas apresentaram menor perda de inserção comparados àqueles que a realizaram em uma universidade pública brasileira, em um período de 12 meses. Todos os profissionais participantes foram treinados e os procedimentos foram supervisionados por um professor especialista em periodontia, assim, as diferenças de resultados podem estar relacionadas às características dissimilares encontradas nos grupos, tais como, nível educacional e condição socioeconômica (COSTA et al., 2012). As desigualdades sociais implicam em desigualdades nos padrões de doenças e também no padrão de utilização dos serviços, com prejuízo às populações de maior risco social (PETERSEN; OGAWA, 2012).

Os estudos que avaliaram a condição periodontal de indivíduos tratados e seu acompanhamento nos retornos para manutenção foram realizados em universidades ou clínicas privadas, onde se consegue um melhor acompanhamento. Pouco se sabe sobre a condição periodontal e o acompanhamento de indivíduos com características peculiares, tais como, baixos níveis socioeconômico e educacional, e que dependem quase que exclusivamente do atendimento público para suprir suas necessidades relacionadas à saúde. Essas informações são importantes para o planejamento dos serviços e estabelecimento de estratégias que possam manter os indivíduos já tratados em condições de saúde, permitindo a estabilidade dos níveis de inserção após o término do tratamento periodontal. Portanto, o objetivo do nosso estudo foi avaliar longitudinalmente a condição periodontal de indivíduos que receberam tratamento/retratamento em um serviço filantrópico.

2 ARTIGO – LONGITUDINAL EVALUATION OF PERIODONTAL CONDITION OF INDIVIDUALS TREATED/RETREATED

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PERIODONTICS

Longitudinal Evaluation of Periodontal Status of Individuals Treated/retreated

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Abstract

The aim of this study was to evaluate longitudinally the periodontal condition of individuals that were treated/retreated in a philanthropic service. Seventyseven individuals were evaluated, on an average of 3.5 years after the end of periodontal treatment. Plaque Index (PII), Gingival Index (GI), Probing Depth (PD), Clinical Attachment Level (CAL) and Bleeding on Probing (BoP) were evaluated. Demographic and socioeconomic data were obtained through a structured interview. Individuals with $\text{BoP} \geq 25\%$ of the sites were referred to retreatment and reexamined after an average of 3.2 years. On the final exam, 48 individuals were divided into three groups: did not receive dental treatment (NDentT); received dental treatment, except periodontal (DentT); received periodontal retreatment (PerioRT). PerioRT individuals had a lower GI mean when compared to the NDentT group ($P < 0.05$), however, they maintained high BoP percentages. Mean of PII, PD, BoP, and CAL, as well as the disease progression, did not differ among the three groups ($P \geq 0.05$). We conclude that even accessing philanthropic service without cost, individuals who were treated/retreated did not present significant alterations on the percentage of sites with BoP and $\text{PD} \geq 5\text{mm} + \text{BoP}$. These results may be related to the fact these individuals did not cooperate with periodic preventive maintenance in a regular and personalized manner.

Keywords: Periodontitis; Root Planing; Periodontal Attachment Loss.

Introduction

Periodontal diseases have a high prevalence and are the major cause of tooth loss worldwide.^{1,2,3} The impact of providing public and philanthropic services is more time and cost spent on the treatment of the population's periodontal needs. A significant part of these services is performed on low-socioeconomic status individuals, a factor associated with higher risk of clinical attachment loss (CAL) progression.^{1,4}

Gold standard treatment for periodontitis consists of scaling and root planing, which reduces inflammation levels in periodontium.^{5,6} Due to endogenous and opportunistic character of periodontal diseases, therapy success requires self-performed biofilm control and involvement in a periodic maintenance program. Axelsson and Lindhe^{7,8} demonstrated that conventional periodontal treatment does not modify periodontal status and it was observed progression of CAL over time, requiring implementation of a maintenance program aimed at modifying oral hygiene behavior. On the other hand, periodontal treatment directed to etiologic agent control and accompanied by a maintenance program, which considers risk profile and habits in a personalized approach, is able to maintain periodontal health.^{9,10,11,12,13,14,15} However, many public and private services do not follow these principles, which can result in retreatment needs and progression of CAL. Retreatment should be performed when disease recurrence is seen in periodic returns. This intervention aims restoring health by reducing bleeding on probing levels, which is associated with periodontal stability.¹⁶

Studies that evaluated periodontal status of treated individuals were carried out at universities or private clinics, where a better follow-up of the returns is usually possible. However, little is known about the periodontal condition and the follow-up of these individuals with low socioeconomic and educational levels, who live in precarious physical and social environment, and depend on public/philanthropic care to receive their health-related treatment. This information is important for the planning of services and establishment of therapeutic and preventive measures that allow the necessary treatment to achieve these goals. Therefore, the objective of our study was to evaluate longitudinally the periodontal status of individuals who received treatment/retreatment in a philanthropic service.

Material and methods

Study design and sample

This study was a prospective cohort. The target-population were individuals of low income seeking care on philanthropic clinic of Azevedo Astrogildo Charity Hospital, Project Friend Hand I, in Santa Maria, Brazil.

The clinic is located in a settlement area, constituted by a population with migration and persistent address change. It is located close to a school and its students and their relatives are the principal users of the clinic. It has a multi-professional team with physicians, dentists, social assistant, speech therapist, nurse and psychologist. Two dentists with residence on periodontics, who have worked in that clinic since the beginning of its activities in 2006, provide all dental care. In order to receive health care, it is necessary to fill in a document provided by the social assistant to confirm low income. This procedure is annually renewed.

To get the sample, all register charts of individuals who received dental care between May of 2006 and December of 2011 were evaluated. This period corresponds to the beginning of the activities in the clinic and the month before the first data collection. All individuals, with 18 years old or more, who had received periodontal treatment consisted of subgingival scaling and root planning, were eligible. The first examination was done at least one year after periodontal treatment conclusion.

Comprehensive non-surgical periodontal therapy was done with manual instruments and subgingival scaling and root planning usually under local anesthesia. The number of dental appointments was personally planned. In each session, instructions and training in oral hygiene were performed. After periodontal treatment conclusion, individuals received instruction to periodically return at least twice a year to maintenance periodontal therapy. The charts did not have data about periodontal clinical examination neither radiographs.

After baseline exam, individuals who had $\geq 25\%$ of sites with bleeding on probing were referred to receive periodontal retreatment. In mean 3.2 years after baseline exam (38.91 ± 4.28 months), 77 individuals examined in 2012 were recalled for final exam. Forty eight individuals who returned to the final exam were categorized into three groups: did

not receive dentistry treatment (NDentT), received dental treatment, except periodontal (DentT); received periodontal retreatment (PerioRT).

Ethical considerations

This study was approved by Ethical and Research Committee of the Federal University of Santa Maria. CAAE: 48631015.3.0000.5346. The individuals signed informed consent term.

Calibration and training

All periodontal clinical parameters were evaluated by the same examiner (JB) on the baseline (2012) and final (2015) exams. Preceding the exams, the examiner received training for Plaque Index (PII),¹⁷ Gingival Index (GI),¹⁸ Plaque Retention Factors (PRF) and Bleeding on Probing (BoP). In addition, it was performed calibration for Probing Depth (PD) and CAL.

The intra-examiner calibration was performed on 10 individuals, who were examined twice, with one-week interval. The reproducibility was tested by weighted Kappa ($\pm 1\text{mm}$) prior to baseline (PD: 0,96; CAL: 0,70) and final (PD: 0,98; NIC: 0,91) exams. Interviews were done by trained researchers, one on the baseline (SD) and two on the final exam (SD, FLBM).

Evaluations

Baseline exams were between January of 2012 and March of 2013. The final exams were done between October and December of 2015.

Demographic and socioeconomic data

Behavior and socioeconomic aspects, dental and medical histories were collected by interview. Socioeconomic status was determined by month familiar income (minimum salary)¹⁹ and individual education level (study years).

Periodontal clinical status:

Periodontal clinical exam was done at six sites per tooth. Third molars were not included. The exams were performed on a dental office with North Carolina probe (CP15 UNC, Neumar).

Periodontal parameters evaluated were: PII, GI, PRF, PD, BoP and CAL. PD and CAL were measured in millimeters and rounded to the closest millimeter.

Periodontitis progression was defined by presence of two or more teeth with proximal attachment loss ≥ 3 mm.²⁰

Statistical Analysis

Descriptive analysis was done through mean, standard deviation and frequency distribution. Normal distribution was tested by Kolmogorov-Smirnov. Comparisons between non-responders and responders were tested through independent t-test and qui-square.

Differences on periodontal parameters between final and baseline exams were done through match t-test and qui-square. Variance analysis (ANOVA – One Way) and Post Hoc Tukey test were performed for comparisons among groups on the final exams. All analysis were performed using IBM SPSS Statistics 21.0 (Statistical Package for the Social Sciences, Chicago, USA).

The analysis unit was individual. The significance level was 5%.

Results

From 123 eligible individuals, 79 were evaluated on initial exam. Individuals who presented $\text{BoP} \geq 25\%$ were invited to return to the service for retreatment. After an average time of 3.2 years (2.33–3.66), individuals were re-evaluated. From the 77 dentate individuals on the initial exam, 49 (63.6%) were re-examined (Figure 1).

Table 1 shows demographic, socioeconomic, behavioral and clinic characteristics observed on the initial exam. There was no difference on the initial exam among individuals who performed (respondents) the final exam, or who did not perform (non-respondents) it ($P \geq 0.05$). The individuals, who were predominantly female, were on average 47 years old, low socioeconomic and educational status. 36.7% of the evaluated families received governmental support/assistance (“Bolsa família”) on the initial exam, and 28.6% received on the final exam. Statistically, significant differences were not observed in relation to smoking status, and PII, GI, PD, CAL and BoP means. Respondents and non-respondents presented $>50\%$ of sites with BoP.

The mean time between the end of the treatment and the initial exam was 3.5 years (Figure 2). In this period, 20.3% of individuals evaluated on the first examination had periodic return with, at least, two annual appointments, 29.1% returned sporadically, and 50.6% did not have dental appointment. The mean time between initial and final examinations was 3.2 (2.3 – 3.6) years. In this interval, approximately 48% of individuals returned to periodontal retreatment (PeriodRT), 23% for some dental treatment, except, periodontal (DentT), and 29% did not return to dental service (NDentT) in the interval between exams. The period between periodontal retreatment and final exam comprehended an average of 2.4 years. From the 23 individuals who received periodontal retreatment, 56.5% did not return to the service, 26.1% and 17.4% returned for periodontal maintenance, one and two times, respectively.

The clinical parameters of re-evaluated individuals are demonstrated in table 2. Individuals presented higher plaque accumulation and lower GI mean ($P < 0.05$). Means of PD, CAL and BoP did not demonstrate statistically significant differences among the exams. More than half of sites had positive BoP in both evaluations, and there was not statistically significant difference in percentage of sites with $\text{PD} \geq 5\text{mm}$. Individuals had less teeth (20.85 vs 20.25) on the final exam ($P = 0.001$), and 52% of them maintained ≥ 21

remaining teeth. Thirty-three individuals did not lose teeth (68.7%), and 15 individuals lost until four teeth. Approximately 98% of the individuals on initial exam, and more than 95% on final exam presented BoP \geq 25% of sites ($P\geq 0.05$). Considering four teeth or more with residual PD \geq 5 mm + BoP, 31% of the individuals needed retreatment after initial exam, and 35% in final exam ($P<0.05$). From the 17 individuals who received retreatment indication on the final exam, 11 had received this indication on the initial exam. Two individuals presented four sites with PD \geq 5 mm + BoP, four individuals had until eight sites, and 11 individuals had more than eight sites.

The table 3 shows the clinical parameters on the final exam according to the retreatment groups (NDentT; DentT; PeriodRT). The PeriodR individuals presented lower GI mean than NDentT ($P<0.05$). The means of PII, PD and CAL were not statistically different among groups ($P\geq 0.05$). The NDentT presented higher percentage of sites with BoP and with PD \geq 5 mm, without statistically significant difference. There was not any difference in retreatment indication among groups, more than 90% of the individuals of each group presented BoP \geq 25% of sites, and more than 27% had a minimum of four teeth with PD \geq 5 mm + BoP.

In relation to the progression of periodontal disease between exams, statistically significant difference was not observed among groups (Figure 3). According to Tonetti and Claffey²⁰ criteria, 58.3% of individuals evaluated on the final exam did not present disease progression. From them, 40% received periodontal retreatment. From the 41.7% who presented progression of disease, 60% received retreatment.

On average, 80% of the sites remained stable (CAL \pm 1mm) between exams. CAL of 3 mm occurred in 2.62% \pm 2.21 (\pm SD) of the sites, and 2.24% \pm 1.35 (\pm SD) gained 3mm.

Discussion

Regardless the possibility of access to philanthropic service without payment, individuals with low educational and socioeconomic levels, who received periodontal treatment and were examined after 3.5 years, maintained high percentage of sites with BoP. They were referred to retreatment and were reexamined after 3.2 years (approximately seven years after initial treatment). Despite the retreatment, the percentage of sites with BoP and PD \geq 5mm + BoP were not significantly altered.

Low socioeconomic and educational levels of individuals characterize a population that depends almost exclusively on public service to supply their health care needs. Individuals with this profile present the worst periodontal status and higher risk for progression of attachment loss.^{1,4,21} Physical and social precarious environments, in which these individuals live, limit choices and available resources. This scenario can contribute to periodontal disease prevalence and it helps to explain geographic inequalities. The community context in which these individuals are included can influence behaviors, like smoking status and frequency of dental visits, and also reduce access to health care.²² Socioeconomic, cultural, policy and environmental disparities are related to inequalities on periodontal health. In order to reduce pronounced disproportion on periodontal status, it is necessary to approach social underlying health determinants. It is possible to reduce the health differences between rich and poor focusing on factors which cause those health problems and create inequalities, and also on social circumstances like income, educational level, employment and housing.^{23,24,25}

There was an increase on PII between exams, and significant reduction on GI, demonstrating improvement on oral hygiene. However, these parameters associated to supragingival plaque control do not change PD and BoP. No other periodontal clinical parameter was significantly altered. These results can be related to irregular or absent periodicity of maintenance after retreatment for the majority of individuals. Studies have shown that periodontal treatment without periodic preventive maintenance has little value in terms of restoring periodontal health.^{9,26,27} High levels of inflammation on periodontal tissues were present 3.5 years after treatment, and 2.4 years after retreatment confirm these findings. In order to achieve the stability of inflammatory clinical parameters, and

consequently, reduce disease recurrence and retreatment needs, it is necessary periodic preventive maintenance with suitable periodicity and personalized manner.^{11,13,15} Fardal and Linden²⁸ showed that almost half of individuals treated for periodontal disease, regularly maintained, needed retreatment along 13 years follow-up. The same authors observed that maintenance, including retreatment when necessary, facilitates higher control of tooth loss in high risk individuals.

Significant alterations in sites with BoP and PD \geq 5mm were not observed. On the final exam, individuals still presented high percentages of BoP (\geq 25%) and, following this criterion, differences in retreatment indication were not observed between exams. Although there is no consensus on the criteria to determine retreatment needs, high percentages of sites with inflammatory signs and/or sites with PD \geq 5mm have been indicated as risk factors for periodontitis recurrence.²⁹ BoP has been used as clinical parameter to evaluate periodontal inflammation.³⁰ Positive bleeding is associated to the presence of subgingival plaque and calculus, indicating re-intervention need in this environment.³¹ Presence of BoP in 25% of sites is associated to the high risk of periodontitis recurrence.²⁹ Using the criteria of four or more teeth with PD \geq 5mm + BoP, some difference between exams could be observed. From the 17 individuals who met this criterion on the final exam, six did not meet it initially. About 65% of the 17 individuals had more than eight sites with PD \geq 5mm + BoP, which confers high risk of periodontitis recurrence, according to Lang, Tonetti.²⁹ On the final exam, 52% of individuals had \geq 21 remaining teeth, presenting enough number of natural teeth to maintain functional dentition.³² Tooth loss in the present study (7.75 teeth, on average) was not different from the average observed in national epidemiological survey in Brazil³³ (7.4 teeth) for individuals with 35 to 44 years old, although in this study the mean age was higher (47.34 years).

PerioRT and DentT groups showed less gingival inflammation and dental plaque than NDentT. Although dental treatment has changed plaque levels, high percentage of sites with PII was observed, which demonstrates that more understanding and training for personal plaque control is necessary. PerioRT group showed lower GI mean than NDentT group although high BoP (\geq 25%) percentage. There is no statistically significant difference on other parameters among the three groups. However, NDentT group had worse

periodontal status comparing with the others. All groups showed more than 50% of sites with residual BoP on the final exam, characterizing periodontal inflammation and risk for CAL. Statistically significant differences were not observed on disease progression among groups. In individuals with periodontitis progression,²⁰ 60% have received periodontal retreatment. Even though they have been treated/retreated, significant differences in periodontal status were not observed. These results can be related to the absence of behavior changes in personal oral hygiene and periodic periodontal maintenance without compliance after treatment/retreatment. Even individuals who returned, these returns were not regular and personalized according to their individual needs. However, 80% of the sites remained stable between exams and more than 50% of individuals presented ≥ 21 teeth on the final exam.

One limitation of this study is the absence of periodontal exams before and after the active periodontal treatment, and therefore, treatment effectiveness for improving periodontal status could not be evaluated. On the other hand, we had access to dental charts since the service started and all individuals were treated by dentists with residence on periodontics. The response rate was high, around 64% in both exams. Our results are associated to effectiveness and are consistent with the routine of dental service that was reference for this study. Although there is evidence of effectiveness of dental treatment aimed to etiological factors control, effective change of behaviors and personalized maintenance, this approach is not often implemented and services are not pivotal in health promotion.

We concluded that positive results after periodontal treatment, as teeth maintenance, were observed. However, high percentage of periodontal inflammation, even after retreatment, shows the need for modification on planning of health restoration and its maintenance.

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Table 1 – Demographic, socioeconomic, behavioral and clinic characteristics in the initial exam.

Characteristics	Respondents (n=49)	Non-respondents (n=28)	P	Total (n=77)
Age ($\bar{X} \pm SD$)	47.34 \pm 7.81	46.92 \pm 7.77	0.81	47.19 \pm 7.47
Gender - n (%)			0.96	
Female	37 (75.5)	21 (75)		58 (75.3)
Male	12 (24.5)	7 (25)		19 (24.7)
Family Income - n (%)			0.15	
\leq 1 SBS	25 (51)	19 (67.9)		46 (59.7)
$>$ 1 SBS	24 (49)	9 (32.1)		31 (40.3)
Educational Level - n (%)				
\leq 8 years of education	40 (81.6)	27 (96.4)	0.06	67 (87)
$>$ 8 years of education	9 (18.4)	1 (3.6)		10 (13)
Smoking Habit - n (%)			0.21	
Smoker	17 (34.7)	13 (46.4)		30 (38.9)
Former smoker	18 (36.7)	5 (17.9)		23 (29.9)
Never smoker	14 (28.6)	10 (35.7)		24 (31.2)
Periodontal Clinic Parameters				
PII ($\bar{X} \pm SD$)	1.56 \pm 0.35	1.74 \pm 0.25	0.18	1.63 \pm 0.33
GI ($\bar{X} \pm SD$)	1.24 \pm 0.23	1.24 \pm 0.18	0.98	1.24 \pm 0.21
PD ($\bar{X} \pm SD$)	2.43 \pm 0.54	2.71 \pm 0.82	0.08	2.53 \pm 0.66
CAL ($\bar{X} \pm SD$)	2.87 \pm 1.26	3.41 \pm 1.89	0.14	3.07 \pm 1.53
BoP ($\bar{X} \pm SD$)	59.65 \pm 18.50	63.81 \pm 19.24	0.35	61.16 \pm 18.76

SD: Standard Deviation; SBS: Standard Brazilian Salarie (\$318.97); PII: Plaque Index; GI: Gingival Index; PD: Probing Depth (mm); CAL: Clinical Attachment Level (mm); BoP: Bleeding on Probing.

Table 2 – Clinic parameters in the initial and final exams of re-evaluated individuals.

	Initial Exam (n=48)	Final Exam (n=48)	P
PII ($\bar{X} \pm SD$)	1.56 ± 0.35	1.87 ± 0.47	0.001
GI ($\bar{X} \pm SD$)	1.24 ± 0.23	1.17 ± 0.26	0.04
PD ($\bar{X} \pm SD$)	2.45 ± 0.54	2.45 ± 0.60	0.90
CAL ($\bar{X} \pm SD$)	2.82 ± 1.22	2.78 ± 1.37	0.47
BoP ($\bar{X} \pm SD$)	59.17 ± 18.38	61.98 ± 19.53	0.17
%Sites PD ≥5 mm ($\bar{X} \pm SD$)	5.09 ± 8.05	5.52 ± 8.78	0.52
Teeth Number ($\bar{X} \pm SD$)	20.85 ± 4.83	20.25 ± 5.39	0.001
Retreatment Indication			
SS≥25% n (%)	47 (97.9)	46 (95.8)	1.00
≥4 Teeth with PD ≥5 mm + BoP n (%)	15 (31.3)	17 (35.4)	0.001

SD: Standard Deviation; PII: Plaque Index; GI: Gingival Index; PD: Probing Depth (mm); CAL: Clinical Attachment Level (mm); BoP: Bleeding on Probing.

Table 3 – Clinic parameters in the final exam according to the groups of retreatment.

	NDentT (n=14)	DentT (n=11)	PerioRT (n=23)	P
PII ($\bar{X} \pm SD$)	2.08 ± 0.46	1.68 ± 0.50	1.84 ± 0.43	0.09
GI ($\bar{X} \pm SD$)	1.34 ± 0.26 ^A	1.12 ± 0.28 ^{A, B}	1.10 ± 0.23 ^B	0.02
PD ($\bar{X} \pm SD$)	2.69 ± 0.66	2.19 ± 0.47	2.43 ± 0.59	0.11
CAL ($\bar{X} \pm SD$)	3.06 ± 1.45	2.57 ± 0.97	2.71 ± 1.51	0.65
BoP ($\bar{X} \pm SD$)	71.10 ± 16.70	53.35 ± 21.02	60.57 ± 18.90	0.06
% Sites PD ≥5 mm ($\bar{X} \pm SD$)	7.96 ± 11.42	2.26 ± 4.37	5.60 ± 8.36	0.27
Retreatment Indication				
BoP ≥25%				
n (%)	14 (100)	10 (90.91)	22 (95.65)	0.52
≥4 Teeth with PD ≥5 mm +	7 (50)	3 (27.3)	7 (30.4)	0.39
BoP				
n (%)				

SD: Standard Deviation; PII: Plaque Index; GI: Gingival Index; PD: Probing Depth (mm); CAL: Clinical Attachment Level (mm); BoP: Bleeding on Probing.

NDentT: Did not received dental treatment; DentT: Received dental treatment, except periodontal; PeriodR: Received periodontal retreatment.

Different letters indicated statistic difference (P<0.05).

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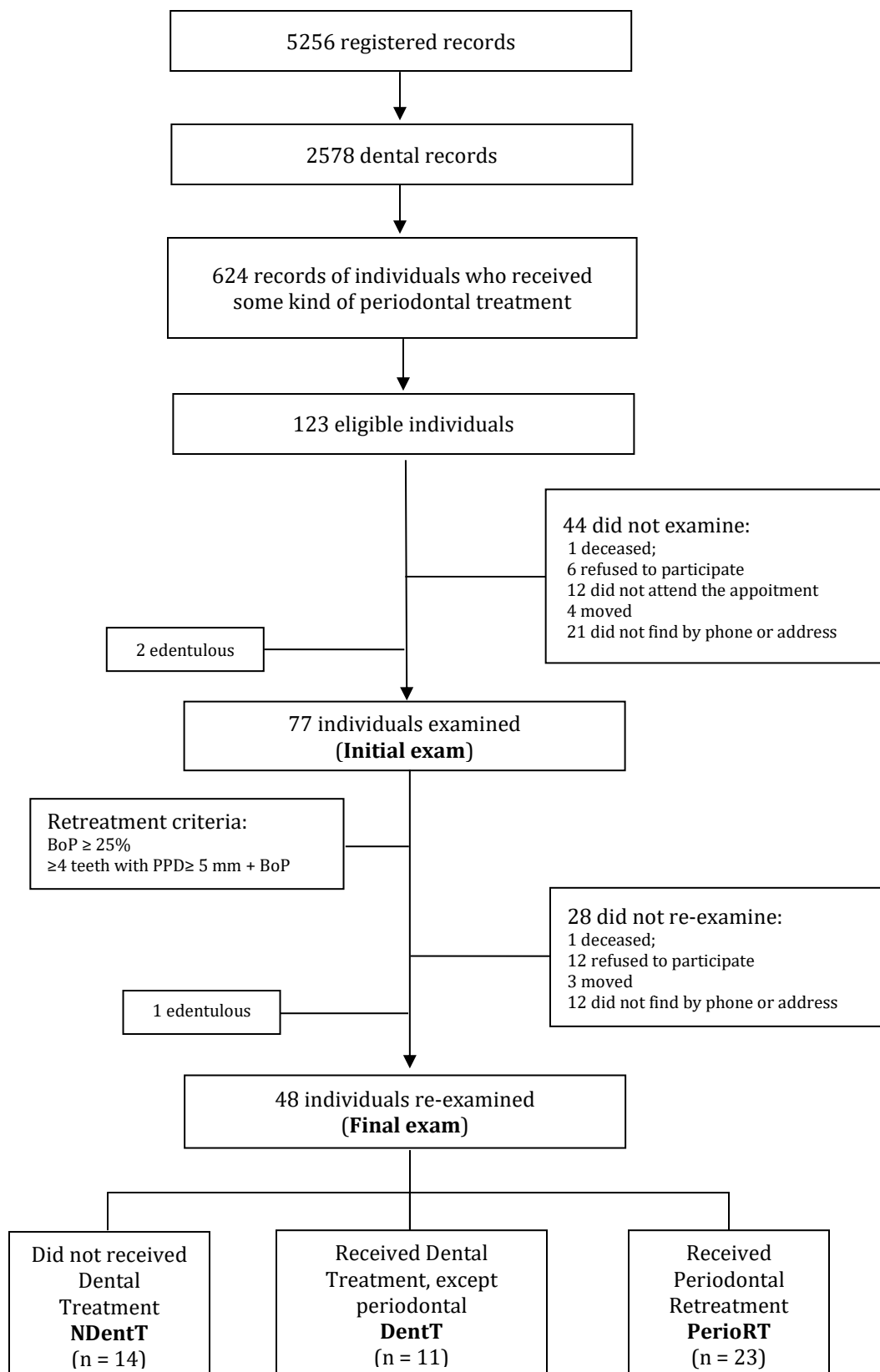
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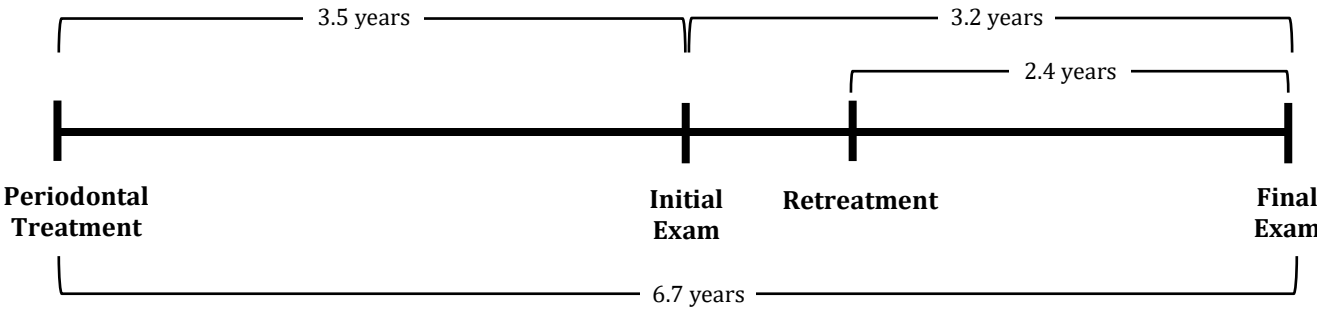
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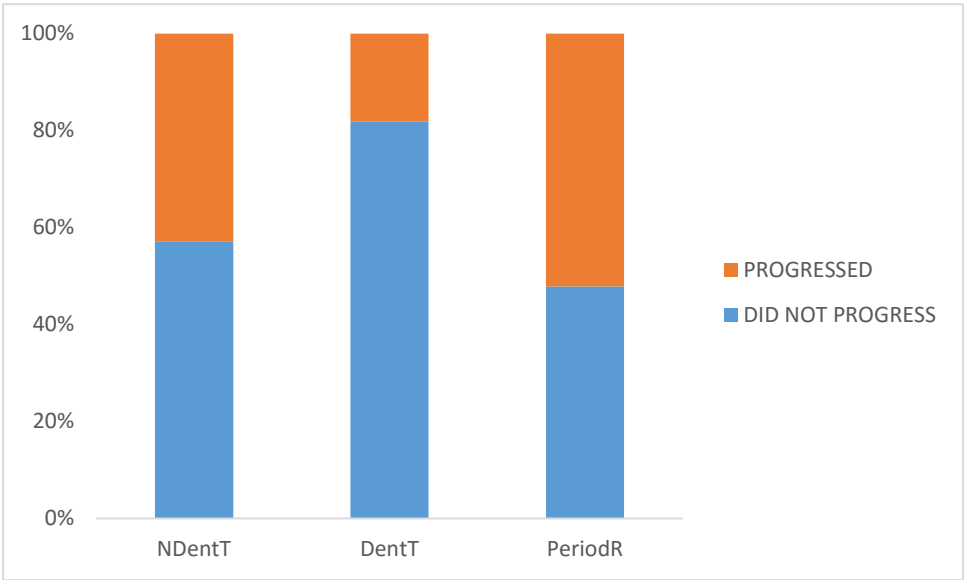
Figure 1 – Flowchart.

Figure 2 – Time line of procedures and exams performed.

Figure 3 – Percentage of individuals who had periodontitis progression according to the groups of retreatment.







NDentT: Did not received dental treatment; DentT: Received dental treatment, except periodontal; PerioRT: Received periodontal retreatment.

3 CONCLUSÃO

Nossos resultados mostram que apesar de receberem tratamento e retratamento em uma unidade filantrópica, indivíduos que não cooperam com um programa de manutenção voltado à prevenção e promoção de saúde, de maneira regular e individualizada, não mantêm, ao longo do tempo, saúde periodontal com níveis inflamatórios reduzidos. Assim, deve haver uma alteração na filosofia de tratamento nestes serviços, implementando um tratamento voltado a mudanças de comportamento de higiene bucal e cuidados profissionais para restabelecer e manter a saúde periodontal e reduzir as necessidades de retratamento.

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APÊNDICE A – TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

Universidade Federal de Santa Maria

Centro de Ciências da Saúde

Curso de Odontologia

Programa de Pós-Graduação em Ciências Odontológicas

TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

Eu _____ estou sendo convidado a participar de um estudo para dissertação de mestrado denominado: **“AVALIAÇÃO LONGITUDINAL DAS CONDIÇÕES PERIODONTAIS DE PACIENTES TRATADOS EM UMA UNIDADE DE ATENDIMENTO FILANTRÓPICA”**, cujo objetivo é descrever a condição periodontal de pacientes tratados, por cirurgiões-dentistas especialistas, na rede filantrópica de saúde.

Esta pesquisa justifica-se pela necessidade de avaliarmos como os pacientes estão sendo tratados periodontalmente (gingiva) e se os mesmos fazem parte de um programa de manutenção periódica preventiva (retornam ao ambulatório para manter a saúde da gengiva) nessa unidade filantrópica e para que possamos contribuir na consolidação do conhecimento científico que norteia as condutas de promoção de saúde nas populações.

A minha participação no referido estudo será no sentido de responder a uma entrevista sobre dados pessoais, hábitos, história médica e odontológica; e permitir a avaliação da minha cavidade bucal, quando serão anotados dados da minha gengiva, de placa bacteriana sobre os dentes, se ocorre sangramento da gengiva quando ela é tocada por um instrumento odontológico (sonda), se há tártaro, cavidades de cárie, restaurações defeituosas e raízes de dentes cariados que levam ao acúmulo de placa bacteriana. Também será examinado e registrado o quanto a sonda entra entre o dente e a gengiva e, a medida entre uma “linha” no dente (que o divide em coroa e raiz) e o final do espaço entre o dente e a gengiva. As entrevistas e fichas, após analisadas, ficarão sob guarda dos professores desse curso de pós graduação.

Como benefício direto, se verificado alguma necessidade de tratamento relacionado à inflamação da gengiva e tecidos de suporte do dente, extrações dentárias, tratamentos de canal, ou outros tratamentos odontológicos serei avisado e devidamente encaminhado às clínicas do curso de Odontologia da UFSM .

Se você tiver alguma consideração ou dúvida sobre a ética da pesquisa, entre em contato:
Comitê de Ética em Pesquisa - CEP-UFSM
Av. Roraima, 1000 - Prédio da Reitoria – 7º andar – Campus Universitário – 97105-900 – Santa Maria-RS - tel.: (55) 32209362 - email: comiteeticapesquisa@mail.ufsm.br

Durante a entrevista e exames posso sentir-me cansado e com algum desconforto ou dor, nos quais um instrumento será passado sobre meu dente; e há o risco, mínimo, de machucar-me com a sonda do examinador, caso ocorra um movimento brusco. Em relação a isto é sabido que os pesquisadores tentarão diminuir ao máximo estes efeitos colaterais. Estou ciente de que minha privacidade será respeitada, ou seja, meu nome ou qualquer outro dado ou elemento que possa, de qualquer forma, me identificar, será mantido em sigilo.

Também fui informado de que posso me recusar a participar do estudo, ou retirar meu consentimento e sair da pesquisa a qualquer momento, sem precisar justificar e não sofrendo qualquer prejuízo à assistência que venho recebendo.

Os pesquisadores envolvidos com o referido projeto são: Flávia Bueno (55 8137 6586) Jociana Boligon (55 99780866) e Silvia de David (55 99640366) todas cirurgiãs-dentistas e vinculadas ao Programa de Pós Graduação em Ciências Odontológicas; e os professores da disciplina de Periodontia, Dra. Karla Zanini Kantorski (55 9159 3232) e Dr. Carlos Heitor Cunha Moreira (55 9106 4673).

É garantido o livre acesso a todas as informações e esclarecimentos adicionais sobre o estudo e suas conseqüências, enfim, tudo o que eu queira saber antes, durante e depois da minha participação. E, se de meu interesse, de ser mantido atualizado sobre os resultados parciais das pesquisas.

Enfim, tendo sido orientado quanto ao teor de todo o aqui mencionado e compreendido a natureza e o objetivo do já referido estudo, manifesto meu livre consentimento em participar, estando totalmente ciente de que não há nenhum valor econômico, a receber ou a pagar, por minha participação.

Santa Maria, ____ de _____ de 201__.

Nome e assinatura do sujeito da pesquisa

Nome e assinatura do pesquisador responsável

Se você tiver alguma consideração ou dúvida sobre a ética da pesquisa, entre em contato:
Comitê de Ética em Pesquisa - CEP-UFSM
Av. Roraima, 1000 - Prédio da Reitoria – 7º andar – Campus Universitário – 97105-900 – Santa Maria-RS - tel.: (55) 32209362 - email: comiteeticapesquisa@mail.ufsm.br

APÊNDICE B – ENTREVISTA

Dados pessoais e demográficos:

Nome: _____

Endereço: _____

Profissão: _____ Estado Civil: _____

Data de Nascimento: _____ Telefones para contato: _____

ENTREVISTA:

1. Quantas vezes você escova seus dentes por dia? _____
2. Que tipo de escova usa (cerdas)? _____
3. Faz uso de algum dispositivo para limpar entre seus dentes? _____
4. Você usa esse dispositivo com que frequência? _____
5. Faz uso de pasta de dente? Qual? _____
6. Faz uso de alguma solução para bochecho? Qual? _____
7. Por qual motivo você usa bochecho? _____
8. Percebe se sangra sua gengiva quando escova? _____
9. Percebe sangue no travesseiro ao acordar? _____
10. Tem sensibilidade nos dentes? _____
11. Sente mau gosto na boca? _____
12. Percebe ou já percebeu dentes frouxos? _____
13. Se você perdeu algum dente, qual foi a causa (dentes frouxos, dor, cárie, necessidade de tratamento de canal, fratura)? _____
14. Sente-se confortável para mastigar qualquer tipo de alimento (carnes, frutas, balas)? _____
15. É fumante? _____
16. Se sim, há quanto tempo fuma? Quantos cigarros/dia? _____
17. Se não, mas é ex-fumante: há quanto tempo deixou o hábito? Quanto tempo fumou? Quantos cigarros/dia fumava? _____
18. Tem diabetes? Alguém em sua família é diabético? _____
19. Quantas vezes/ano frequenta o ambulatório? _____
20. Qual o principal motivo que o leva a procurar atendimento odontológico? _____
21. Você tem conhecimento da doença periodontal? _____
22. Você recebeu orientações de como limpar seus dentes? _____
23. Os dentistas relataram a necessidade de retornar para acompanhamento? _____
24. A cada consulta há explicação sobre cuidados com a higiene oral? _____
25. Está fazendo uso de algum medicamento? Qual? _____
26. Qual é a renda da sua família? _____ salários mínimos.
27. Você recebe algum auxílio do governo? (bolsa família) _____
28. Qual é seu grau de escolaridade? _____
29. Qual o grau de escolaridade do chefe da sua família? _____

30. Após o último exame realizado pela nossa equipe você recebeu tratamento dentário? ()sim ()não

31. Por que motivo você buscou/não buscou tratamento entre os exame:

- () perda do direito ao atendimento no ambulatório
- () dificuldade de agendar horário
- () falta de horários alternativos para o atendimento
- () problemas financeiros para buscar atendimento
- () não senti necessidade de procurar atendimento
- () medo de dentista
- () outros - especificar

32. Após o último exame realizado pela nossa equipe você teve dor nos dentes?

33. Como o problema (dor nos dentes) foi solucionado? Você precisou procurar atendimento odontológico? O dente foi mantido ou extraído? _____

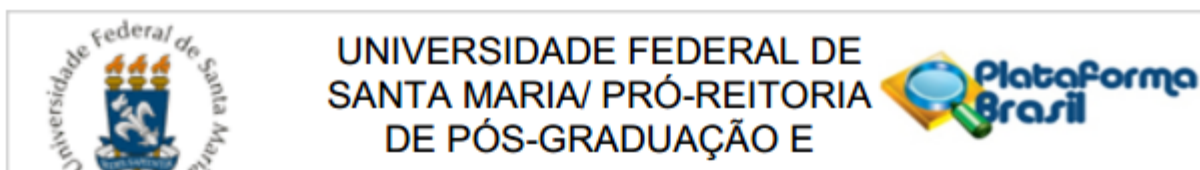
34. Foi apresentado a você as alternativas de tratamento? _____

35. Porque foi escolhido essa alternativa para resolver o problema relacionado a dor?

36. Caso o dente tenha sido extraído: Você gostaria de ter mantido o dente/dentes?

37. O conformo mastigatório comparado ao último exame e agora:

- () melhorou () permaneceu o mesmo () piorou

ANEXO A – APROVAÇÃO DO COMITÊ DE ÉTICA EM PESQUISA**PARECER CONSUBSTANCIADO DO CEP****DADOS DO PROJETO DE PESQUISA**

Título da Pesquisa: AVALIAÇÃO LONGITUDINAL DAS CONDIÇÕES PERIODONTAIS DE PACIENTES TRATADOS EM UMA UNIDADE DE ATENDIMENTO FILANTRÓPICA

Pesquisador: KARLA ZANINI KANTORSKI

Área Temática:

Versão: 2

CAAE: 48631015.3.0000.5346

Instituição Proponente: Universidade Federal de Santa Maria/ Pró-Reitoria de Pós-Graduação e

Patrocinador Principal: Financiamento Próprio

Situação do Parecer:

Aprovado

Necessita Apreciação da CONEP:

Não

ANEXO B – NORMAS PARA PUBLICAÇÃO NO *BRAZILIAN ORAL RESEARCH*



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Reference citations must be identified in the text with superscript Arabic numerals. The complete reference list must be presented after the “Acknowledgments” section, and the references must be numbered and presented in Vancouver Style in compliance with the guidelines provided by the International Committee of Medical Journal Editors, as presented in Uniform Requirements for Manuscripts Submitted to Biomedical Journals (<http://www.ncbi.nlm.nih.gov/books/NBK7256/>). The journal titles should be abbreviated according to the List of Journals Indexed in Index Medicus (<http://www.ncbi.nlm.nih.gov/nlmcatalog/journals>). The authors shall bear full responsibility for the accuracy of their references.

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Characteristics and layouts of types of manuscripts

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Limited to 30,000 characters including spaces (considering the introduction, methodology, results, discussion, conclusion, acknowledgments, tables, references,

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- Title Page
- Main text (30,000 characters including spaces)
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- Keywords: 3 (three)-5 (five) main descriptors
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- Methodology
- Results
- Discussion
- Conclusion
- Acknowledgments
- Tables
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- Figures: a maximum of 8 (eight) figures, as described above.

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Layout - Text Files

- Title page
- Main text (10,000 characters including spaces)
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- Descriptors: 3 (three)-5 (five) main descriptors
- Introduction
- Methodology
- Results
- Discussion
- Conclusion
- Acknowledgments
- Tables
- References: a maximum of 12 references
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Layout- Text Files

- Title page
- Main text (30,000 characters including spaces)
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- Keywords: 3 (three)-5 (five) main descriptors
- Introduction
- Methodology
- Results
- Discussion
- Conclusion
- Acknowledgments
- Tables
- References: maximum of 50 references
- Figure legends

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- Figures: a maximum of 6 (six) figures, as described above.

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While summarizing the results of original studies, quantitative or qualitative, this type of manuscript should answer a specific question, with a limit of 30,000 characters, including spaces, and follow the Cochrane format and style (www.cochrane.org). The manuscript must report, in detail, the process of the search and retrieval of the original works, the selection criteria of the studies included in the review, and provide an abstract of the results obtained in the reviewed studies (with or without a meta-analysis approach). There is no limit to the number of references or figures. Tables and figures, if included, must present the features of the reviewed studies, the compared interventions, and the corresponding results, as well as those studies excluded from the review. Other tables and figures relevant to the review must be presented as previously described. The abstract can contain a maximum of 250 words.

Layout - Text Files

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- Location of the studies
- Critical Evaluation and Data Collection
- Data analysis and presentation
- Improvement
- Review update
- References: no limit on the number of references
- Tables

Layout - Graphic Files

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EXAMPLES OF REFERENCES

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Goracci C, Tavares AU, Fabianelli A, Monticelli F, Raffaelli O, Cardoso PC, et al. The adhesion between fiber posts and root canal walls: comparison between microtensile and push-out bond strength measurements. *Eur J Oral Sci.* 2004 Aug;112(4):353-61.

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