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Marina Blanco Pohl

**IMPACTO DA PANDEMIA DE COVID-19 NA QUALIDADE DE VIDA
RELACIONADA À SAÚDE BUCAL DE ADOLESCENTES DE SANTA
MARIA - RS**

Santa Maria, RS
2022

Marina Blanco Pohl

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Dissertação apresentada ao Curso de Mestrado do Programa de Pós-Graduação em Ciências Odontológicas, Área de Concentração em Odontologia, ênfase em Odontopediatria, da Universidade Federal de Santa Maria (UFSM, RS), como requisito parcial para obtenção do título de Mestre em Ciências Odontológicas.

Orientadora: Prof^ª Dr^ª Fernanda Tomazoni

Santa Maria, RS
2022

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Aprovado em 22 de agosto de 2022.

Fernanda Tomazoni, Dr^a. (UFSM)
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Santa Maria, RS
2022

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Dedico este trabalho a toda minha família, principalmente aos meus pais e minha irmã pelo incentivo, amor e carinho.

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RESUMO

IMPACTO DA PANDEMIA DE COVID-19 NA QUALIDADE DE VIDA RELACIONADA À SAÚDE BUCAL DE ADOLESCENTES DE SANTA MARIA - RS

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ORIENTADORA: Fernanda Tomazoni

Em dezembro de 2019, o mundo se deparou com o surgimento de um novo patógeno na China, causador da doença Covid-19. Em março de 2020 foi decretado estado de pandemia e algumas medidas foram implementadas para frear a propagação do vírus. Uma dessas medidas foi o distanciamento social, que estabelece limites na convivência entre as pessoas. Essas ações resultaram em consequências psicológicas, físicas, sociais e econômicas, que influenciaram na saúde geral e bucal das populações. O objetivo desse estudo foi avaliar o impacto da pandemia de Covid-19 na qualidade de vida relacionada à saúde bucal (QVRSB) de adolescentes da cidade de Santa Maria – Rio Grande do Sul ao longo de um ano e três meses após o seu início. Este é um estudo longitudinal, que considerou uma subamostra de uma coorte. Especificamente para este estudo, essa subamostra foi avaliada em três tempos diferentes: dezembro de 2019 a fevereiro de 2020 – antes do surto de Covid-19 (T1), junho e julho de 2020 - 3 meses (T2) e junho e julho de 2021 - 1 ano e 3 meses (T3) após o início da pandemia de Covid-19. A pesquisa contou com 290 adolescentes no T1, desses, 207 foram reavaliados no T2 e 204 no T3. A QVRSB foi avaliada através da versão brasileira reduzida do *Child Perception Questionnaire* 11-14 (CPQ₁₁₋₁₄ - ISF:16). Além disso, variáveis socioeconômicas, clínicas e demográficas, como renda familiar, cárie dentária e idade do adolescente também foram coletadas. A análise dos dados foi realizada no STATA 14.0. Foi feita uma análise descritiva da amostra de acordo com as características avaliadas em T1, T2 e T3. As mudanças na QVRSB nas três etapas foram avaliadas por modelos multiníveis, ajustados, de regressão de Poisson para medidas repetidas, com efeito aleatório. Os resultados foram apresentados como razão de médias (RM) e intervalo de confiança de 95% (IC 95%). Considerando as pontuações totais do CPQ11-14 ao longo do acompanhamento, o escore médio foi de 11 (DP 8,0) em T1, 8,3 (DP 7,8) em T2 e 12,8 (DP 8,7) em T3. Na análise ajustada, quando comparado com T1, os adolescentes apresentaram uma média 29% menor (RM 0,71 95%IC 0,66–0,75) e 11% maior (RM 1,11 95%IC 1,05–1,17) nos escores totais do CPQ 11-14, em T2 e T3, respectivamente. Ao analisarmos os domínios do CPQ11-14, o domínio bem-estar emocional teve um escore médio 43% menor (RM 0,57 95%IC 0,50-0,66) e 25% maior (RM 1,25 95%IC 1,12-1,40) em T2 e T3, respectivamente, quando comparados com T1. Sobre o domínio bem-estar social, quando comparado com T1, a média foi 44% menor (RM 0,56 95%IC 0,47-0,68) em T2 e em T3 17% maior (RM 1,17 95%IC 1,01-1,35). Assim, pode-se concluir que, ao longo da pandemia de Covid-19, houve uma melhora na QVRSB e nos domínios de bem-estar social e emocional como efeito imediato, porém após 1 ano e 3 meses de seu início, as condições bucais passaram ter um maior impacto negativo na qualidade de vida dos adolescentes.

Palavras-chave: Saúde bucal. Pandemia Covid-19. Qualidade de Vida. Adolescente.

ABSTRACT

IMPACT OF THE COVID-19 PANDEMIC ON ORAL HEALTH-RELATED QUALITY OF LIFE IN ADOLESCENTS FROM SANTA MARIA - RS

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In December 2019, the world was faced with the emergence of a new pathogen in China, the disease caused by it became known as Covid-19. In March 2020, as Covid-19 became an international health emergency and measures were adopted to stop the spread of the virus. One of these measures was social distancing, with the goal of restricting coexistence contact between people. These restrictions led to psychological, physical, social and economic consequences that influenced on general and oral health of populations. The objective of this study was to evaluate the impact of the Covid-19 pandemic on the oral health-related quality of life (OHRQoL) of adolescents from the city of Santa Maria - Rio Grande do Sul, throughout a year and three month-long period of time following the start of this pandemic. This is a longitudinal study, which evaluated a subsample of a cohort carried out in the city. Specifically for this study, the subset of the sample was evaluated at three different times: December 2019 to February 2020 – before the Covid-19 outbreak (T1), June and July 2020 - 3 months (T2) and June and July 2021 - 1 year and 3 months (T3) after the beginning of the Covid-19 pandemic. The research included 290 adolescents at T1, 207 were reevaluated at T2 and 204 at T3. OHRQoL was assessed using the Brazilian short version of the Child Perceptions Questionnaire 11-14 (CPQ₁₁₋₁₄-ISF:16). In addition, socioeconomic, clinical, and demographic variables such as family income, dental caries, and adolescent age were also collected. Data analyses was performed using STATA 14.0. A descriptive analysis of the sample was carried out according to the characteristics evaluated at T1, T2 and T3. Changes in OHRQoL before, 3 months and 1 year and 3 months after the start of the Covid-19 pandemic were evaluated using adjusted Multilevel Poisson regression models for repeated measures with random effect. The results are presented in Rate Ratio (RR) and 95% confidence interval (95% CI). Regarding total scores, the overall throughout the follow-up CPQ11-14, the mean score was 11 (SD 8.0) at T1, 8.3 (SD 7.8) at T2, and 12.8 (SD 8.7) at T3. In the adjusted analysis, compared to T1, adolescents had an average 29% lower (IRR 0.71 95%CI 0.66–0.75) and 11% higher (IRR 1.11 95%CI 1.05–1.17) in the total scores CPQ11-14, at T2 and T3, respectively. Analyzing the CPQ11-14 domains, the emotional well-being had a mean score that was 43% lower (IRR 0.57 95%CI 0.50-0.66) and 25% higher (IRR 1.25 95%CI 1.12-1.40) from T2 and T3, respectively, comparing to T1. Regarding the social well-being, comparing to T1, the mean was 44% lower (IRR 0.56 95%CI 0.47-0.68) in T2 and 17% higher in T3 (IRR 1.17 95% CI 1.01-1.35). In conclusion, the Covid-19 pandemic, indicated an improvement in OHRQoL and social and emotional well-being domains as an immediate effect, but after 1 years and 3 months, oral health have a greater negative impact on the quality of life of adolescents.

Keywords: Oral health. COVID-19 Pandemic. Quality of Life. Adolescent.

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1 INTRODUÇÃO

Em dezembro de 2019, na China, documentou-se o surgimento de um patógeno, o novo coronavírus (SARS-CoV-2), responsável pela pandemia de Covid-19. Diante da nova realidade e na tentativa de diminuir a propagação do vírus, em 30 de janeiro de 2020 a Organização Mundial de Saúde (OMS) classificou a situação como uma emergência internacional de saúde pública (WHO, 2019). Depois disso, no dia 11 de março de 2020 foi definido o estado de pandemia (WHO, 2020).

A pandemia de Covid-19 retrata o maior obstáculo do mundo desde o início do século 21 até o momento (PIRES BRITO *et al.*, 2020). Esse vírus se espalhou rapidamente por todos os continentes, tomou proporções alarmantes, causando uma preocupação para o cenário global. O mundo naquele momento se deparava com um problema eminente, pois a estrutura e a assistência de saúde não estavam preparadas para enfrentar esse desafio (PIRES BRITO *et al.*, 2020). Entretanto, cada país com sua realidade e com seus investimentos reagiu de maneiras diferentes frente à pandemia de Covid-19, fazendo com que alguns conseguissem frear mais rapidamente a disseminação do vírus do que outros (PIRES BRITO *et al.*, 2020).

No Brasil, o primeiro caso de Covid-19 foi registrado em fevereiro de 2020 e, até o momento (agosto de 2022) registrou-se 34.124.579 casos da doença e 681.006 óbitos. (CONASS, 2022). Assim como em outros países, foram adotadas medidas para controlar a propagação da doença na população; dentre as principais esteve o distanciamento social. Tal medida, juntamente com novas regras para o funcionamento do comércio e eventos, promoveu a diminuição da interação física entre os cidadãos por meio da suspensão de atividades presenciais em escolas, universidades, empresas e locais públicos (AQUINO *et al.*, 2020). Colocar em prática essas ações no contexto brasileiro tem representado um enorme desafio, devido às desigualdades presentes no nosso país e nos possíveis impactos gerados por esse tipo de restrição (AQUINO *et al.*, 2020).

Desde o início da pandemia em 11 de março de 2020 até aproximadamente seis meses do seu início, foi registrado mais de 150 mil óbitos e mais de 5 milhões de casos confirmados no Brasil, atingindo todos os estados do país (FREITAS *et al.*, 2020). Em uma análise realizada para estudar a evolução do Covid-19 no país nesses seis meses, foi possível perceber que o pico, ou seja, o maior número de casos da pandemia aconteceu no mês de maio de 2020, seguindo elevado até o mês de setembro, quando nos meses seguintes ocorreu uma diminuição nesses números (FREITAS *et al.*, 2020). Especificadamente até o mês de junho de 2020, o número total de casos confirmados no Brasil foi de 1.368.195 e 58.314 mortes foram registradas. Em

julho de 2020, esses números aumentaram, e o total de casos confirmados no Brasil foi de 2.610.102 e 91.263 mortes até o final do mês (FREITAS *et al.*, 2020).

No que se refere ao cumprimento das medidas de isolamento durante a pandemia no Brasil, o índice de isolamento no país atingiu o seu auge no dia 22 de março de 2020, com índice de 62,2%. Após essa data o isolamento começou a diminuir, permanecendo um grande período com índice abaixo dos 50%. Além disso, em junho e julho de 2020 esse índice variou de 34,7% até 49,8% (INLOCO, 2020).

Em 2021, foi vivenciado uma segunda onda da pandemia no país, com surgimento de novas variantes mais contagiosas, levando à ocorrência de um colapso nos serviços de saúde. Entretanto, o ano de 2021 também foi marcado pelo avanço da vacinação. No final janeiro de 2021, o Brasil atingiu a marca de 80% da população-alvo com duas doses da vacina, fazendo com que algumas medidas restritivas fossem aliviadas. Em relação à metade do ano de 2021, junho foi marcado pelo surgimento de novas variantes de Covid-19 e em julho a variante delta se tornou preocupação global. Apesar disso, no final desse mesmo mês o Brasil registrou queda de 40% das mortes com o avanço das vacinas (BUTANTAN, 2021).

Um estudo realizado no Brasil, por Barros e colaboradores (2021), avaliou a prevalência de anticorpos SARS-CoV2 e mostrou uma ocorrência semelhante em crianças, adolescentes e adultos. O mesmo estudo verificou que o cumprimento de regras do distanciamento social foi maior pelas crianças, seguidas dos adolescentes quando comparadas com os adultos. Além disso, entre crianças e adolescentes os autores observaram que o respeito ao distanciamento social foi adotado de forma mais rigorosa por famílias mais privilegiadas quando comparadas àquelas socioeconomicamente prejudicadas (BARROS *et al.*, 2021). Um estudo nacional com base em dados oficiais das secretarias de saúde foi desenvolvido com o objetivo de avaliar as taxas de incidência e mortalidade pelo coronavírus e investigar sua relação com as desigualdades socioeconômicas nos 27 estados brasileiros. O estudo incluiu crianças e adolescentes de 0 a 19 anos, avaliados até 3 de setembro de 2020. A taxa de Covid-19 em crianças brasileiras foi de 559 casos por 100 mil habitantes. Foram registradas oitocentas mortes nessa população, o que represente 0,7% do total de mortes no país até o dia 3 de setembro de 2020. No que se refere aos estados brasileiros, esse estudo apontou diferenças entre eles nos números de Covid-19, apresentando uma associação entre a taxa de mortalidade e as desigualdades socioeconômicas (MARTINS-FILHO *et al.*, 2021).

Os impactos gerados pelas medidas adotadas para controlar a propagação da doença ao longo desse período envolvem questões sociais, econômicas e comportamentais, as quais impactam substancialmente na saúde física e mental das pessoas (TEOTÔNIO *et al.*, 2020).

Um estudo transversal realizado no mês de abril de 2020, início da pandemia com brasileiros que possuem acesso à internet avaliou os seguintes tópicos: perfil socioeconômico, cumprimento, qualidade e impacto gerado pelo isolamento social e o tempo que os indivíduos estariam inclinados a permanecer no isolamento. A pesquisa obteve 16.440 questionários respondidos por indivíduos com 18 anos ou mais. Em relação ao impacto causado pelo isolamento social, 39% dos participantes relataram que o convívio social foi o maior prejudicado pelo isolamento, 24% dos indivíduos apontam que a condição financeira foi mais impactada, 19% relatam que o isolamento não gera impactos e só 8% indicaram a própria saúde como principal questão envolvida (BEZERRA *et al.*, 2020).

Um estudo realizado no Brasil, por meio de pesquisa online, procurou avaliar a qualidade de vida da população brasileira durante o período de isolamento social, levando em consideração aspectos físicos, psicológicos, sociais e econômicos (TEOTÔNIO *et al.*, 2020). Uma amostra de 1.859 adultos respondeu a um questionário aplicado no período de maio a agosto de 2020. Os resultados apontaram que os adultos brasileiros foram mais impactados economicamente e socialmente do que fisicamente e psicologicamente. Além do mais, os indivíduos participantes da pesquisa que não tinham emprego e aqueles contaminados pelo vírus relataram pior qualidade de vida (TEOTÔNIO *et al.*, 2020). Em outro estudo transversal desenvolvido no Brasil e realizado de abril a maio de 2020 com 45.161 adultos e idosos através de um questionário virtual, os autores procuraram apurar dados para avaliar condição de vida, saúde e comportamento durante a pandemia de Covid-19 (BARROS *et al.*, 2020). Constatou-se que 40,4% dos indivíduos avaliados relataram, constantemente, sentimento de tristeza ou depressão, 52,6% apresentavam ansiedade ou nervosismo com frequência. Além disso, mais de 40% dos participantes que não tinham problemas de sono revelaram o início desses, e os que já conviviam com esses problemas relataram uma piora. Esses resultados expõem o impacto que a pandemia e o isolamento social causaram na saúde mental e na qualidade do sono de adultos e idosos (BARROS *et al.*, 2020).

Alguns estudos têm avaliado as consequências da pandemia e do distanciamento social na vida de adolescentes e crianças, onde a maioria avalia os impactos na saúde geral. No estudo transversal de Malta (2021) realizado com 9.470 adolescentes de 12 a 17 anos, foram analisadas informações relacionadas ao estilo de vida desses adolescentes antes e durante a pandemia. Essas informações envolveram: consumo de alimentos saudáveis e não saudáveis, prática de atividade física e sedentarismo, tabagismo e consumo de bebidas alcoólicas. Os autores observaram alterações comportamentais dos adolescentes brasileiros na pandemia e crescimento de condutas que colocam em risco a saúde (MALTA *et al.*, 2021). Além disso,

uma revisão sistemática desenvolvida com seis estudos, incluindo um total de 3.177 crianças e/ou adolescentes, concluiu que a pandemia de Covid-19 gerou um efeito negativo na qualidade de vida dessa população (NOBARI *et al.*, 2021). Em outra revisão sistemática da literatura realizada para investigar a ansiedade dos adolescentes em tempos de pandemia, foi possível concluir que a pandemia pode aumentar o número de transtornos psiquiátricos, estresse, depressão e ansiedade. Entretanto, percebeu-se que a divulgação de informações sobre o Covid-19 e estratégias de proteção pode reduzir esse nível de ansiedade (REGO, 2021).

A pandemia de Covid-19 também teve repercussões nos atendimentos odontológicos no Brasil. Um estudo ecológico retrospectivo, abrangendo 5.564 municípios do país, avaliou a implicação da pandemia nos procedimentos odontológicos no Sistema Único de Saúde (SUS) (CHISINI *et al.*, 2021a). Os procedimentos foram coletados através de registros do SIA/SUS (Sistema de Informações Ambulatoriais do SUS) e foram divididos em grupos: primeira consulta odontológica; urgência e emergência; tratamentos restauradores; extrações dentárias; endodontia; procedimentos preventivos individuais; procedimentos coletivos; tratamento periodontal básico; prótese e tratamento cirúrgico periodontal. A mensuração do impacto da pandemia foi calculada através da comparação das taxas de procedimentos de cada mês de 2020 no período de março a agosto (período de pandemia) com o respectivo mês em 2019 (antes da pandemia). O estudo concluiu que houve uma redução em todos os grupos de procedimentos odontológicos. Esse dado preocupa o futuro pós período pandêmico, uma vez que pode ocasionar uma sobrecarga no sistema (CHISINI *et al.*, 2021a). Além disso, outro estudo realizado através de uma retrospectiva longitudinal de janeiro de 2019 a maio 2020 teve como objetivo avaliar as consequências da pandemia de Covid-19 nos tratamentos odontopediátricos (restauração, exodontia e endodontia de decíduos) realizados pelo SUS no Brasil (CHISINI *et al.*, 2021b). Os resultados mostram que avaliando o início do contágio exponencial (abril 2020), a pandemia causou uma diminuição de 89% no total de procedimentos odontopediátricos. Frente aos diferentes procedimentos essa redução se deu de maneira igual e em relação as regiões do Brasil esse decréscimo foi mais visível na região Sudeste (CHISINI *et al.*, 2021b).

Nesse sentido, algumas pesquisas também têm demonstrado evidências que apontam efeitos da pandemia sobre desfechos de saúde bucal. Uma pesquisa descritiva avaliou o impacto da pandemia de Covid-19 na saúde bucal dos estudantes de Odontologia de uma universidade privada da cidade de Vassouras no Rio de Janeiro (PROENÇA *et al.*, 2021). Ela foi desenvolvida entre os meses de março e abril de 2021, utilizando um questionário online respondido por 74 alunos, na faixa etária de 18 a 23 anos. Todos os entrevistados relataram que houve alteração na rotina e observou-se que essas mudanças influenciaram na saúde bucal,

através da diminuição na frequência de escovação, aumento da necessidade de atendimentos odontológicos durante o isolamento social e redução no número de universitários que seguiam uma dieta balanceada. Mesmo que os participantes da pesquisa tenham conhecimento prévio sobre a importância de manter uma boa higiene bucal, os impactos foram expressivos e a queda na qualidade do cuidado com a saúde bucal chamou a atenção (PROENÇA *et al.*, 2021).

Outro estudo descritivo, realizado através de um questionário online com alunos de uma faculdade da Bahia, foi executado para investigar o desenvolvimento de hábitos deletérios orais em tempos de Covid-19 (BADARÓ, 2021). O estudo envolveu 145 acadêmicos do curso de odontologia com idades entre 18 e 30 anos. Durante esse período, a ansiedade e a insegurança foram os sentimentos mais descritos pelos participantes, os hábitos parafuncionais foram descritos por 60% dos alunos, a onicofagia (hábito de roer unhas) foi o mais prevalente com 26,2%, em seguida foi o bruxismo cêntrico e excêntrico ambos com 17,2% e a sucção de lábio ou de língua foi hábito com menor prevalência. Com isso, percebeu-se que existe associação entre o desenvolvimento de hábitos deletérios e os efeitos psicológicos causados pela pandemia e seu isolamento social (BADARÓ, 2021). Além disso, Silva e colaboradores realizaram uma revisão de literatura que concluiu que fatores psicológicos agravados pela pandemia de Covid-19 como ansiedade e depressão devido ao distanciamento social possuem relação com o aparecimento de hábitos parafuncionais como bruxismo e disfunções temporomandibulares (SILVA *et al.*, 2021). Nesse sentido, diversos estudos referidos por eles descrevem que o estresse e a ansiedade podem atuar aumentando a frequência, a intensidade e a duração dos hábitos parafuncionais (SILVA *et al.*, 2021).

Um estudo transversal foi desenvolvido para analisar o impacto do distanciamento social gerado pela pandemia de Covid-19 sobre os hábitos alimentares e do sono de estudantes com diferentes perfis de cronotipos (matinal, noturno, intermediário) (AGUIAR *et al.*, 2021). Participaram do estudo universitários de odontologia do estado de Minas Gerais que estavam respeitando o isolamento social. No total, 542 acadêmicos responderam a um questionário online disponível no período de 17 de agosto a 31 de agosto de 2020, contendo dados sobre o cronotipo, dados sociodemográficos, obediência ao distanciamento social, hábitos referentes a atividades físicas, alimentação e sono em relação ao período antes e durante a pandemia. O estudo revelou que o perfil matutino assim como o vespertino mostraram uma piora nos hábitos alimentares e no sono durante a pandemia de COVID-19. Com isso, conclui-se que os hábitos nocivos estavam presentes entre os acadêmicos durante o isolamento social no Brasil (AGUIAR *et al.*, 2021).

O impacto da pandemia na saúde bucal de crianças e adolescentes também tem sido avaliado. Um estudo transversal utilizou um questionário online, respondido por 253 pais/cuidadores de crianças de 3 a 15 anos de idade, brasileiras e portuguesas, que respeitavam o distanciamento social (BAPTISTA *et al.*, 2021). O objetivo do estudo foi analisar o sono, suas mudanças durante o distanciamento social e sua relação com a higiene bucal da criança percebida pelos responsáveis. Foi possível concluir que a pandemia junto com o distanciamento social influenciou nos distúrbios do sono, e esse foi relacionado com uma má condição de higiene bucal (BAPTISTA *et al.*, 2021). Outro estudo desenvolvido por Brondani e colaboradores (2021) propôs avaliar as mudanças psicossociais e comportamentais relacionadas à saúde bucal de 207 adolescentes durante o período da pandemia. Nesse estudo, foi observada uma diminuição considerável na frequência de escovação dentária, na busca por serviços odontológico e na autopercepção em relação à necessidade de tratamento odontológico 3 meses após o início da pandemia. Entretanto, a qualidade do sono, o relato de bruxismo e o consumo de açúcar não modificaram. Os autores concluíram que a pandemia alterou fatores sociais e comportamentais dos adolescentes (BRONDANI *et al.*, 2021).

Um estudo transversal foi desenvolvido para avaliar as ações e atitudes dos pais em relação aos cuidados com a saúde bucal de seus filhos durante a pandemia (GOSWAMI, 2021). Esse estudo envolveu uma amostra aleatória de 120 pais de crianças de até 14 anos de idade, selecionados de agosto até setembro de 2020 em um ambulatório de odontopediatria na Índia. Em resposta ao questionário aplicado, 60,8% dos pais revelaram que seus filhos necessitavam de tratamento odontológico durante o isolamento, mas apenas 50,8% entraram em contato com o dentista para tratamento. Com relação aos motivos dessa demanda por atendimento a maioria era por dor de dente (73,81%), seguido de edema gengival (9,84%), trauma dentário (8,2%) e edema extraoral (4,9%). No que se refere ao tratamento odontopediátrico, 41,7% dos pais revelam que esse foi afetado negativamente pelo isolamento e 23,3% descrevem que a saúde bucal de seus filhos decaiu mesmo com uma manutenção da higiene em casa. O estudo concluiu que a conduta dos pais foi ruim frente à saúde bucal de seus filhos durante o período de pandemia do Covid-19 e que se precisa urgentemente sensibilizar os pais sobre a real importância e necessidade de manter a saúde bucal de seus filhos (GOSWAMI, 2021).

A literatura tem apontado que piores condições psicossociais e comportamentais são fatores de risco para a ocorrência das doenças, inclusive as que acometem a cavidade bucal (PETERSEN, 2003; WATT, 2007). A saúde bucal é considerada componente fundamental da saúde e do bem-estar físico e mental, que ocorre ao longo de um contínuo, sendo influenciada pelos valores e atitudes das pessoas e das comunidades. Além do mais, a saúde bucal reflete os

atributos fisiológicos, sociais e psicológicos que são essenciais para a qualidade de vida e é influenciada pela mudança de experiências, percepções, expectativas e capacidade de adaptação às circunstâncias (GLICK *et al.*, 2016).

Condições precárias de saúde bucal causam impactos negativos na autopercepção de saúde e na qualidade de vida das crianças e de seus familiares (BARBOSA, 2008; PIOVESAN *et al.*, 2010). Nesse sentido, a qualidade de vida relacionada à saúde bucal (QVRSB) é um importante desfecho subjetivo cujo fundamento teórico considera que o processo saúde-doença está fortemente associado às percepções subjetivas de necessidades de saúde bucal e os impactos causados pelas doenças (LOCKER, 1988). Ela pode ser definida como um constructo multidimensional que se refere ao impacto das doenças e distúrbios orais em aspectos da vida cotidiana que um indivíduo considera importante, que ocorrem com uma magnitude suficiente, em termos de frequência, gravidade ou duração para afetar sua experiência e percepção de vida como um todo (LOCKER, 2007).

Alguns estudos têm avaliado os impactos da pandemia da Covid-19 na QVRSB da população infantojuvenil. Samuel e colaboradores (2021) realizaram um estudo transversal envolvendo crianças de 2 a 6 anos de idade do sul da Índia durante a Covid-19. Este estudo avaliou o impacto da dor dentária da criança, do medo que o cuidador tinha da Covid-19 e do sofrimento dos pais na QVRSB das crianças. Os resultados obtidos revelaram que um maior relato de dor dentária e experiência de cárie nas crianças, maior angústia e medo dos cuidadores frente ao vírus tiveram relação com uma pior QVRSB dos pré-escolares durante o período da pandemia (Samuel *et al.*, 2021). No Brasil, um estudo avaliou as mudanças na QVRSB de 207 adolescentes durante o período da pandemia (KNORST *et al.*, 2021). Esse estudo apontou uma melhora na QVRSB dos adolescentes 3 meses após o início da pandemia, o que indica uma atenuação no relato dos problemas de saúde bucal pelos participantes. Além disso, adolescentes de famílias que realizam um isolamento social reduzido e cujos responsáveis foram prejudicados nos seus empregos durante a pandemia apresentam uma pior QVRSB (KNORST *et al.*, 2021).

Diante do que foi exposto, podemos perceber que há um interesse crescente da comunidade científica em estudar os efeitos da pandemia da Covid-19 em diferentes condições de saúde geral e bucal. Entretanto, poucos estudos avaliaram a QVRSB de crianças e adolescentes ao longo da pandemia, considerando dados longitudinais, com um maior período de acompanhamento, o que possibilita avaliar essa condição em diferentes momentos do período pandêmico. Além disso, nenhum estudo considerou informações obtidas antes de iniciar esse período, a fim de comparar e melhor entender as diferentes condições ao longo do

tempo. Sendo assim, esse estudo foi realizado na tentativa de suprir essas lacunas e contribuir com informações úteis para o planejamento de medidas de saúde bucal que possam contornar os problemas gerados, bem como para fornecer dados que possam auxiliar nas tomadas de decisões em situações tão adversas e que possam impactar o contexto e a vida dos adolescentes.

Assim, nessa dissertação será apresentado o artigo intitulado “Impacto da pandemia de Covid-19 na qualidade de vida relacionada à saúde bucal de adolescentes de Santa Maria – RS”, que teve como objetivo avaliar o impacto da pandemia da Covid-19 na QVRSB de adolescentes de Santa Maria ao longo de um ano e três meses após o seu início e comparar o relato de QVRSB nos adolescentes em diferentes tempos: antes, 3 meses e 1 ano e 3 meses após o início da pandemia.

2 ARTIGO – TIMING DIFFERENCES IN THE IMPACT OF THE COVID-19 PANDEMIC ON ORAL HEALTH-RELATED QUALITY OF LIFE OF ADOLESCENTS: A LONGITUDINAL STUDY

Este artigo será submetido ao periódico *Quality of Life Research*, ISSN: 0962-9343, Fator de impacto = 4.147; Qualis A2. As normas para publicação estão descritas no Anexo C.

Title page**Timing differences in the impact of the COVID-19 pandemic on oral health-related quality of life of adolescents: a longitudinal study****Authors**

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Compliance with Ethical Standards

Conflicts of interest: The authors declare that they have no conflict of interest.

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the Human Research Ethics Committee of the Federal University of Santa Maria (protocol number 11765419.1.0000.5346), Brazil.

Informed consent: Informed consent was obtained from all individual participants included in the study.

Abstract

Purpose: to evaluate the immediate and late effects of the COVID-19 pandemic on the oral health-related quality of life (OHRQoL) of adolescents.

Methods: This is a longitudinal study performed with adolescents (11-15 years old) from Southern Brazil, which were evaluated before the COVID-19 outbreak, and 3 (T2) and 15 (T3) months after the beginning of the pandemic. OHRQoL was assessed using the Brazilian short version of the CPQ11-14. Socioeconomic, demographic and clinical variables were also collected. Changes in OHRQoL before 3 (T2) and 15 months (T3) after the start of the COVID-19 pandemic were evaluated by adjusted Multilevel Poisson regression models for repeated measures. The results are presented in Incidence Rate Ratio (IRR) and 95% confidence interval (95% CI).

Results: A total of 290 adolescents were evaluated at T1, 207 were re-evaluated at T2 and 204 at T3. The overall CPQ11-14 scores over follow-ups were 11.0 (SD 8.0) at T1, 8.3 (SD 7.8) and 12.8 (SD 8.8) at T3. Compared to T1, adolescents presented overall CPQ11-14 scores 29% lower (IRR 0.71 95%CI 0.66–0.75) at T2 and 11% higher at T3 (IRR 1.11 95%CI 1.05–1.17). This timing pattern of reduction followed by an increase in CPQ11-14 scores was also observed especially for emotional and social well-being domains.

Conclusion: The COVID-19 pandemic impacted differently the adolescent's OHRQoL over time, indicating a reduction in impacts immediately after the beginning and a worsening in the long term of exposition to this scenario.

Keywords: Adolescent. COVID-19 Pandemic. Longitudinal study. Oral health. Quality of Life.

Introduction

In late December 2019, the world experienced the emergence of a new virus (SARS-CoV-2), which has been defined as COVID-19. In an attempt to slow the spread of the virus, in March 2020 the World Health Organization (WHO) defined the situation as a pandemic state [1], which has been considered the biggest world's obstacle from the beginning of the 21st century to date [2]. In Brazil, the first case of Covid-19 was detected in February 2020, and currently (August 2022) there were the total number of cases is 34,124,579 and 681,006 deaths [3]. During the COVID-19 course, several measures were adopted to control the spread of the disease in the population, among the main the social distancing [4]. These measures have generated several consequences, such as social, economic, and behavioral impacts, which substantially impact people's physical and mental health [5, 6, 7].

Previous studies have evaluated the impact of the COVID-19 pandemic on the general health of children and adolescents, showing that this scenario generated a negative effect on the quality of life of this population. In addition, it has been found that the pandemic also generated an increase in the number of psychiatric disorders, such as stress, depression and anxiety [8, 9, 10]. The impact of the pandemic on the oral health of children and adolescents has also been evaluated. The pandemic along with social distancing influenced sleep disorders, which were related to poor oral hygiene habits [11]. Furthermore, other psychosocial and behavioural changes related to oral health were also observed, such as a considerable decrease in the frequency of toothbrushing, dental attendance, and in self-perception of dental treatment needs [12].

Poor oral health conditions may generate negative impacts on the self-perception of oral health and the quality of life of children and their families [13, 14]. In this sense, oral health-related quality of life (OHRQoL) is an important subjective outcome, which reflects the individual's perception of their oral health in terms of performing daily activities, social interaction and well-being [15, 16]. Some studies have evaluated the impacts of the COVID-19 pandemic on the OHRQoL of children and adolescents. A cross-sectional study performed with pre-schoolers in India demonstrated that the higher report of dental pain and the presence of dental caries during the pandemic period was related to a worse OHRQoL [17]. In addition, a longitudinal study performed in Brazil with the same sample of this study, evaluated the immediate effect of the pandemic on OHRQoL of adolescents, observing a decrease in the perception of oral health problems 3 months after the beginning of the pandemic [18].

Since the OHRQoL tends to change over time and is heavily influenced by personal and environmental factors [16], it is necessary to assess the long-term impact of the COVID-19 pandemic in this aspect. During the pandemic course, the virus containment measures and clinical oral health conditions have changed [17, 19], thus, it is expected that this would be reflected in the subjective perception of quality of life. Therefore, this longitudinal

study is a continuation that aimed to evaluate the temporal pattern of impact of COVID-19 on the OHRQoL of adolescents, considering an immediate e long-term evaluation after the start of this scenario.

Methods

Ethical aspects

This project was approved by the Committee for Ethics in Research of School of Dentistry, Federal University of Santa Maria (protocol number 11.765.419.1.0000.5346). All participants were informed regarding of the methodology of the study and agreed to participate and their caregivers signed an informed consent form.

Study design and sample

This is a longitudinal study, which considered a subsample of a large cohort study performed with a representative sample of children from Santa Maria, Southern Brazil. The original cohort study started in 2010 and evaluated 639 individuals from 1 to 5 years old that have followed subsequently in 2010, 2012, 2017 and 2020. More details about the cohort waves have already been published [20, 21]. The 10 years follow-up data collection of the original cohort have been performed from December 2019 to February 2020, just before the beginning of the COVID-19 pandemic in Brazil. Thus, this study considered a subsample of adolescents evaluated after of the pandemic scenario (T1). Posteriorly, these individuals were re-evaluated 3 (T2) and 15 (T3) months after star of the pandemic in Brazil (T3) (Figure 1).

Data collection and variables

At T1, a sub sample of adolescents from original cohort (11 to 15 years old) were evaluated in person between December 2019 to February 2020 though school and home visits. At this moment, the data were collected through structured questionnaires answered by the adolescents or their guardians and the oral clinical examinations were performed by previously calibrated examiners (kappa coefficients ranged from 0.70 to 0.92). A total of 290 adolescents were evaluated.

Posteriorly, two follow-up assessments were performed through telephone calls accomplish 3 trained interviewers. In June and July 2020, 3 months after the beginning of the COVID-19 pandemic in Brazil, the adolescents were contacted for a second data collection (T2) in order to evaluate the immediate impacts of the pandemic on oral health measures. A total of 207 adolescents were contacted. Some results regarding this evaluation have already been published [12, 18]. After, in June and July 2021, 15 months after the beginning of

the pandemic, a third evaluation was performed (T3) to verify the long-term effects of the pandemic on oral health measures. A total of 204 adolescents were evaluated.

The outcome of this study was the OHRQoL, evaluated at T1, T2 and T3. To obtain information about this variable, the adolescents answered the short version of the Child Perceptions Questionnaire 11–14 (CPQ11-14) [22, 23]. This questionnaire has 16 questions that assess the frequency of events in the last 3 months and is divided into 4 domains: oral symptoms, functional limitations, social well-being, and emotional well-being. Each question has five answer options that varies in a Likert scale from 0 to 4: “never” = 0; “once or twice” = 1; “sometimes” = 2; “frequently” = 3; and “every day/almost every day” = 4. The overall score is obtained by the sum of all items and can range from 0 to 64 points. The higher the score obtained, the greater the impact of oral health conditions on quality of life [23]. In our study, we used this variable in a continuous way.

Demographic, socioeconomic and clinical variables were also collected and used as adjust factors. Demographic variables include sex (boys or girls), age (in years), and skin colour. The skin colour was collected using the criteria established by the Brazilian Institute of Geography and Statistics (IBGE), and posteriorly dichotomized into white and non-white [24]. Socioeconomic variables included household income and maternal education. Household income was measured through the sum of monthly family income in Brazilian currency (*Reais* - R\$5.3 it was equivalent to US\$1.00 approximately). For data analysis, this variable was categorized into income tertiles: lowest, medium and highest. Maternal education was measured in years of formal education and dichotomized into < 8 years or \geq 8 years of formal education.

The clinical variable considered was dental caries, which was measured at T1 using the diagnostic criteria of the International Caries Detection and Assessment System (ICDAS) [25]. For the analysis, the variable was dichotomized into teeth with presence (score 3, 5 or 6) or absence (score 0, 1, 2 or 4) of cavitated caries. At T3, this condition was evaluated through the self-report of cavitated caries lesion: “Do you have caries (hole in the tooth)?; which response options of 0 = yes and 1= no [26].

Some variables related to the COVID-19 pandemic were collected at T2 and T3. The degree of social distancing performed by the family was assessed through the question used in the Epi-Covid Brazilian national survey: "Regarding the social distance that is being recommended by health authorities, that is, staying at home and avoiding contact with other people, how much do you think you are doing? 0=practically isolated; 1= quite; 2= middle; 3= little; 4= very little [27]. For data analysis, this variable was dichotomized into high (1 and 2) or middle/low social distancing (2,3 and 4). In addition, a question related to job loss was also assessed: “Has anyone in the family lost their job due to the pandemic?” with the answer options of 0= yes and 1= no”.

Statistical analysis

Data analyses were performed using STATA 14.0 (Stata Corporation, College Station, TX, USA). A descriptive analysis of the sample according to the characteristics evaluated at T1, T2 and T3 was performed. The Chi-square test was used to the comparison of the sample characteristics between followed and dropouts individuals. A descriptive analysis of overall and specific domains of CPQ11-14 over time has also been performed.

Changes in overall and specific domains CPQ11–14 scores over time (before, 3 and 15 months after star of the COVID-19 pandemic) were evaluated using adjusted Multilevel Poisson regression models for repeated measures. The model considered a fixed effect with a random intercept. In the multilevel structure, the OHRQoL repeated measures over time (level 1) were nested in the adolescents (level 2). Multilevel analysis has been described as an appropriate model in longitudinal data since it can be viewed as two-level data [28]. Demographic, socioeconomic and clinical variables were used as a model adjustment if presented $p < 0.20$ in the unadjusted analysis. The results are presented as incidence rate ratio (IRR) and 95% confidence interval (95% CI).

Results

From 290 individuals evaluated at T1, 207 were re-evaluated at T2 (response rate of 71.3%) and 204 at T3 (response rate of 70.3%). The main reason for the losses in follow-up was due to the inability to contact the participants by phone calls ($n = 80$), followed by refusal to participate ($n=6$). A sample of 182 adolescents evaluated both at T1, T2 and T3 was considered.

Table 1 shows the sample characteristics before the COVID-19 outbreak (T1), 3 months (T2) and 15 months (T3) after the beginning of the pandemic. The sample was balanced in relation to sex and skin colour. Regarding socioeconomic characteristics, during the pandemic, there was an increase in the number of families with low household incomes when compared to before the pandemic. About 26.6% of the adolescents presented cavited caries lesions at T1. According to information obtained during the pandemic, at T2, 64.8% of the families were performing high social distancing. In T3, this high social distancing declined to 45%. In addition, about 31.2% and 35.2% of the adolescents were from families whose members lost their jobs during the pandemic at T2 and T3, respectively.

The overall and specific-domains CPQ11-14 scores over time are presented in Table 2. Regarding total scores, the overall CPQ11-14 scores were 11.0 (SD 8.0) at T1, 8.3 (DP 7.8) at T2 and 12.8 (DP 8.8) at T3. The overall CPQ11-14 scores presented a mean reduction of about 24% from T1 to T2, and a relative increase of 16.3% from T1 to T3. All specific domains CPQ11-14 scores showed reduced means from T1 to T2, with the larger

change observed in the emotional well-being domain. At T3, all specific-domains CPQ11-14 scores decreased compared to T1, except the functional limitations domain, which remained the same.

Table 3 displays changes in overall and domains specific CPQ11-14 scores during the COVID-19 pandemic in Brazil. Compared to T1, adolescents presented overall CPQ11-14 scores 29% lower (IRR 0.71 95%CI 0.66–0.75) at T2 and 11% higher at T3 (IRR 1.11 95%CI 1.05–1.17). All CPQ11-14 domains showed reduced means at T2, with the larger change in scores observed in the emotional well-being domain (IRR; 0.58 95% CI 0.50–0.66), which were 42% lower from T1 to T2. At T3, there were no significant changes in the oral symptoms and functional limitation domains. However, there was an increase in CPQ11-14 means in the emotional (IRR 1.25 95%CI 1.12-1.40) and social well-being domains (IRR 1.17 95% CI 1.01-1.35) at T3 compared to T1.

Discussion

This longitudinal study aimed to evaluate the immediate and long-term impact of the COVID-19 pandemic on the OHRQoL of adolescents. As the main result, overall CPQ11-14 scores were significantly lower 3 months after the beginning of the COVID-19 pandemic, indicating a lower negative impact of oral conditions on adolescents' quality of life in an immediate evaluation. However, 15 months after the beginning of this scenario, overall CPQ11-14 scores were significantly higher than before the pandemic, indicating a worsening in OHRQoL throughout the pandemic. Thus, the COVID-19 pandemic impacted differently the adolescent's OHRQoL over time, indicating a reduction in impacts immediately after the beginning and a worsening in the long term of exposition to this scenario.

Our findings indicated that OHRQoL scores were significantly lower 3 months after the beginning of the pandemic in Brazil, demonstrating a reduction in the negative perception of oral problems by adolescents in an immediate evaluation. This result has already been published and discussed previously [18]. This finding can be explained by different explanations. In an analysis that observed the evolution of the COVID-19 pandemic in Brazil, it was found that the highest number of positive cases occurred in the month of May 2020, following the high until the month of September [29]. At this moment, personal concerns and priorities were focused on the risk situation of the moment, and oral health was not a priority, which may explain the reduction in impacts perceived by the adolescents. Thus, since the school environment and the relationships between friends in this age group interfere with the OHRQoL [30], the lack of interaction may have reflected in the perception of oral problems [31] and, consequently, in the reduction of questionnaire scores. Finally, a previous studies have shown an increase in family ties and social support during the Covid-19 pandemic [32]. Social capital interacts with people's natural

coping and is considered an important protective factor against stress and impacts subjective oral health outcomes [33], such as OHRQoL.

Considering the long-term impact, our results demonstrate that CPQ11-14 scores increased 15 months after the beginning of the pandemic, reflecting a worsening in OHRQoL. One possible explanation for this finding is that the COVID-19 pandemic state culminated in the decreased availability of dental care in Brazil, both in public and private services. Previous studies showed that the pandemic impacts a reduction in dental procedures in all age groups in the Brazilian Health System [34, 35], whereas there was a decrease of 89% in the total number of paediatric dental procedures [35]. In addition, there were recommendations to dental professionals to attend only to dental urgencies during this period, due to which may have also influenced the reduction of the supply of dental care in the private system [36]. These data are of concern for the future after the pandemic period, as it indicates that demand has been suppressed and may cause an overloaded in the system [34]. In this sense, we hypothesized that oral problems, when present, returned with a more burden than before this scenario, impacting more on adolescents OHRQoL.

Regarding specific-domains CPQ11-14 scores, the emotional well-being and social well-being presented changes during the COVID-19 pandemic. At the beginning of the pandemic, both domains presented a decrease in the mean scores, indicating an improvement in OHRQoL, followed by an increase in the scores in long term, representing a worsening in OHRQoL 15 months after the beginning of the pandemic. A possible explanation for this finding is that at the beginning of the pandemic some measures were adopted to control the spread of the disease in the population; among the main ones was social distancing [4]. In this sense, the demand for social isolation changed the routine of the adolescents, since face-to-face school activities were suspended, impacting a decrease in social interactions and connections with friends and colleagues, and consequently, a lower impact on emotional and social aspects in this population. However, as the pandemic progresses, these measures were gradually decreasing, bringing back social interactions and connections . Another possible explanation for this pattern in emotional well-being and social well-being domains may be related to the change in behavioural conduct of Brazilian adolescents during this pandemic period, since previous studies reported an increase in poorer health practices, which may also influence oral health outcomes [8]. Furthermore, the pandemic also increased the number of psychiatric disorders, such as stress, depression, and anxiety [10], which may be negatively linked to social-emotional skills and consequently in quality of life measures [37].

This study has some limitations. Firstly, only a part of the individuals from the initial cohort was evaluated in this study, which may limit the external validity of our findings. However, a sensibility analysis showed that

this concern did not affect our findings. Another factor that may have influenced the results was the application of the OHRQoL questionnaire via telephone class at follow-ups. Nevertheless, a previous study showed that this method generate similar results compared to face to face evaluation for OHRQoL outcomes [38]. Finally, the presence of dental caries was evaluated by self-reported during the COVID-19, which can generate an information bias in relation to this condition. Regardless of, this variable was used only to adjust the final model and previous studies reinforced the self-reported clinical condition on epidemiological studies [26].

This study also has strengths that need to be highlighted. Our findings showed the impact of the COVID-19 pandemic context on changes in the OHRQoL of adolescents using data before, 3 and 15 months after the beginning of the pandemic in Brazil, demonstrating the immediate and long-term effects of this scenario. These results highlight the importance of studying the impact of atypical and unknown situations on adolescents' lives, considering that this phase is a preparation for adulthood and many choices and experiences lived may impact throughout adulthood. Thus, once the burden of oral diseases in the OHRQoL has increased during the COVID-19 pandemic, public health measures can be implemented for this population.

Conclusion

Our findings suggest that the COVID-19 pandemic impacted differently the adolescent's OHRQoL over time, indicating a reduction in impacts immediately after the beginning and a worsening in the long term of exposition to this scenario. This timing pattern of reduction followed by an increase in OHRQoL scores was also observed especially for emotional and social well-being domains.

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Variables	Baseline (T1)	3 months follow-up (T2)	15 months follow-up (T3)
<i>Demographic and socioeconomic</i>	N* (%)	N* (%)	N* (%)
Sex			
Girls	88 (48.3)	88 (48.3)	88 (48.3)
Boy	94 (51.6)	94 (51.6)	94 (51.6)
Skin colour			
White	88 (48.9)	88 (48.9)	88 (48.9)
No-white	92 (51.1)	92 (51.1)	92 (51.1)
Maternal education			
< 8 years of formal education	47 (26.6)	47 (26.6)	47 (26.6)
≥ 8 years of formal education	130 (73.4)	130 (73.4)	130 (73.4)
Household income in R\$			
Lowest tertile	52 (29.7)	57 (31.3)	66 (36.5)
Medium	68 (38.9)	69 (37.9)	65 (35.9)
Highest tertile	55 (31.4)	56 (30.8)	50 (27.6)
<i>Oral health measures</i>			
Untreated dental caries			
Absent	134 (73.6)	-	-
Present	48 (26.4)	-	-
Self-reported dental caries			
Not	-	-	128 (78.5)
Yes	-	-	35 (21.5)
<i>Pandemic aspects</i>			
Social distancing			
High	-	118 (64.8)	82 (45.0)
Middle/Low	-	64 (35.2)	100 (55.0)
Loss of employment			
No	-	125 (68.7)	118 (64.8)
Yes	-	57 (31.2)	64 (35.2)

Table 1. Sample characteristics before (T1), after 3 months (T2) and after 15 months (T3) from the beginning of the COVID-19 pandemic in Brazil.

R\$, Real (R\$5.3 it was equivalent to US\$1.00 approximately); *Values less than 182 are due to missing data.

Outcome (CPQ 11-14)	Baseline (T1)	Follow-up (T2)	Follow-up (T3)
	Mean (SD)	Mean (SD)	Mean (SD)
Oral symptoms	3.7 (2.5)	3.3 (2.6)	4.2 (2.5)
Functional limitations	2.9 (2.8)	2.2 (2.8)	2.9 (2.9)
Emotional well-being	2.7 (3.4)	1.7 (3.0)	3.6 (3.8)
Social well-being	1.6 (2.3)	1.0 (2.0)	2.1 (2.6)
Total score	11.0 (8.0)	8.3 (7.8)	12.8 (8.8)

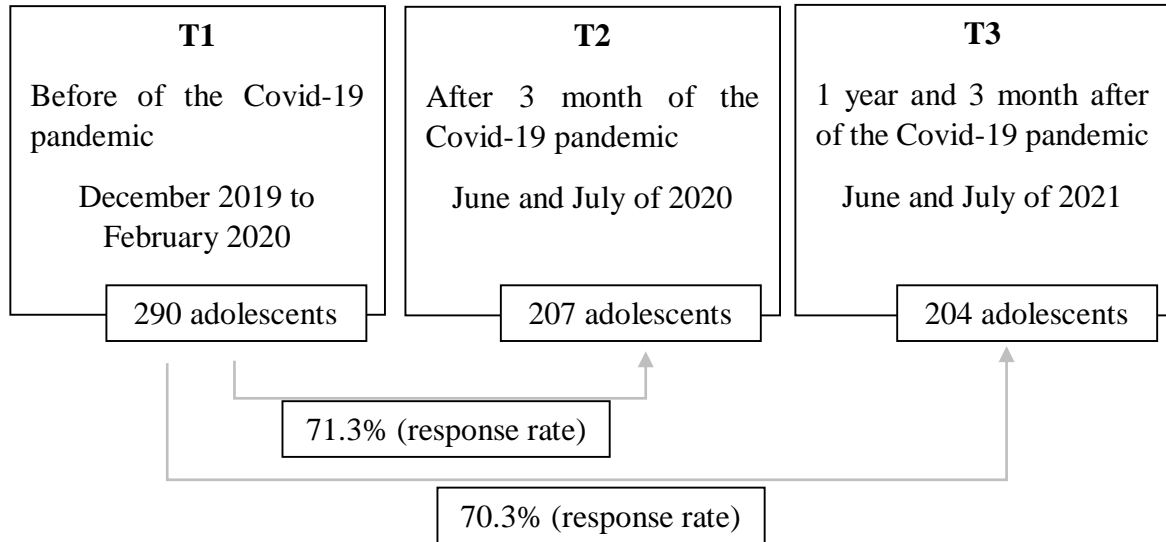
Table 2. Overall and domain-specific CPQ11–14 scores in the sample, before and after 3 and 15 months from the beginning of the COVID-19 pandemic in Brazil

SD standard deviation; CPQ, child perception questionnaire.

Table 3. Changes in overall and domains specific CPQ11–14 scores during the Covid-19 pandemic in Brazil, determined by Multilevel Poisson regression analysis for repeated measures.

Outcome (CPQ11-14)	T2 ^a		T3 ^a	
	Unadjusted	Adjusted*	Unadjusted	Adjusted*
	IRR (95% CI)	IRR (95% CI)	IRR (95% CI)	IRR (95% CI)
Oral symptoms	0.88 (0.80-0.97)	0.86 (0.77-0.95)	1.10 (1.00-1.21)	1.09 (0.99-1.20)
Functional limitations	0.75 (0.66-0.85)	0.73 (0.65-0.83)	1.02 (0.92-1.15)	1.00 (0.90-1.13)
Emotional well-being	0.58 (0.51-0.67)	0.57 (0.50-0.66)	1.30 (1.17-1.45)	1.25 (1.12-1.40)
Social well-being	0.58 (0.49-0.69)	0.56 (0.47-0.68)	1.22 (1.07-1.41)	1.17 (1.01-1.35)
Total score	0.72 (0.68-0.77)	0.71 (0.66-0.75)	1.14 (1.08-1.21)	1.11 (1.05-1.17)

CPQ, child perception questionnaire. IRR, incidence rate ratio; CI, confidence interval; ^aReference category: before the Covid-19 pandemic (T1); *Adjusted by sex, age, household income and presence of dental caries.

Figures**Figure 1.** Flowchart of sample design and characterization

3 CONSIDERAÇÕES FINAIS

Nosso estudo mostrou a influência do contexto de pandemia de Covid-19 nas mudanças na QVRSB de adolescentes em idade escolar usando três etapas de acompanhamento: antes, 3 meses e 1 ano e 3 meses após o início da pandemia. Como principal resultado, foi possível observar os escores totais do CPQ11-14 foram significativamente menores 3 meses após o início da pandemia de Covid-19, indicando um menor impacto negativo das condições bucais na qualidade de vida dos adolescentes. Entretanto, 1 ano e 3 meses após o seu início, os escores totais do CPQ11-14 foram significativamente maiores, indicando um maior impacto negativo das condições bucais na qualidade de vida dos adolescentes no decorrer da pandemia.

Em relação aos escores dos domínios específicos do CPQ11-14, o domínio bem-estar emocional e bem-estar social, na análise ajustada, se comportaram de maneira semelhante no decorrer da pandemia. Em um primeiro momento, no início da pandemia, ambos apresentaram uma diminuição no escore médio, indicando uma melhora na QVRSB, seguido de um aumento na média do escore, o que representa uma piora na QVRSB 1 ano e 3 meses após o início da pandemia.

Os achados desse estudo são importantes, uma vez que os resultados destacam a importância de estudar o impacto de situações atípicas e desconhecidas na vida dos adolescentes, levando em consideração que essa fase é uma preparação para a vida adulta e muitas escolhas e experiências vividas podem perdurar e impactar ao longo da vida adulta (STRAATMANN *et. al*, 2019).

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ANEXO A – CHILD PERCEPTION QUESTIONNAIRE (CPQ₁₁₋₁₄)

CPQ₁₁₋₁₄

Você diria que a saúde de seus dentes, lábios, maxilares e boca é:

() Excelente () Boa () Regular () Ruim

Até que ponto a condição dos seus dentes, lábios, maxilares e boca afetam sua vida em geral?

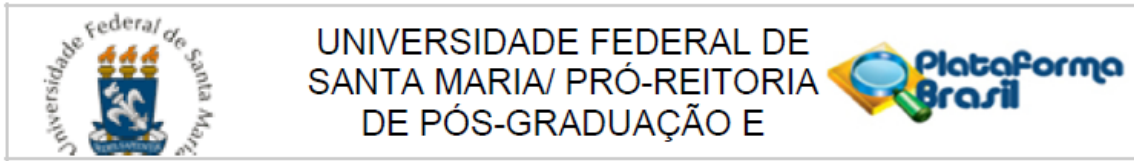
() De jeito nenhum () Um pouco () Moderadamente () Bastante () Muitíssimo

PERGUNTAS SOBRE PROBLEMAS BUCAIS

Nos últimos 3 meses, com que frequência você teve?

	nunca	1 ou 2 vezes	algumas vezes	frequentemente	todos os dias ou quase todos
1. Dor nos seus dentes, lábios, maxilares ou boca?					
2. Feridas na boca?					
3. Mau hálito?					
4. Restos de alimentos presos dentro ou entre os seus dentes?					
5. Demorou mais que os outros para terminar sua refeição?					
6. Dificuldade para morder ou mastigar alimentos como maçãs, espiga de milho ou carne?					
7. Dificuldades para dizer algumas palavras?					
8. Dificuldades para beber ou comer alimentos quentes ou frios?					
9. Ficou irritado (a) ou frustrado (a)?					
10. Ficou tímido (a), constrangido (a) ou com vergonha?					
11. Ficou chateado?					
12. Ficou preocupado com o que as outras pessoas pensam sobre seus dentes, lábios, boca ou maxilares?					
13. Evitou sorrir ou dar risadas quando está com outras crianças?					
14. Discutiu com outras crianças ou pessoas de sua família?					
15. Outras crianças lhe aborreceram ou lhe chamaram por apelidos?					
16. Outras crianças fizeram perguntas sobre seus dentes, lábios, maxilares e boca?					

ANEXO B – CARTA DE APROVAÇÃO DO COMITÊ DE ÉTICA EM PESQUISA



UNIVERSIDADE FEDERAL DE
SANTA MARIA/ PRÓ-REITORIA
DE PÓS-GRADUAÇÃO E

PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: Influência do capital social no desenvolvimento do senso de coerência e nas condições bucais de escolares: uma coorte de 10 anos

Pesquisador: Thiago Machado Ardenghi

Área Temática:

Versão: 2

CAAE: 11765419.1.0000.5346

Instituição Proponente: Departamento de Estomatologia

Patrocinador Principal: Financiamento Próprio

DADOS DO PARECER

Número do Parecer: 3.425.591

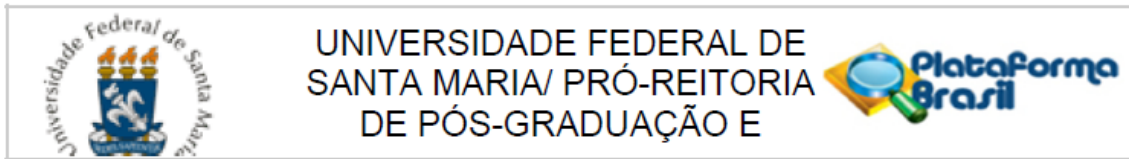
Apresentação do Projeto:

O objetivo deste estudo é explorar as inter-relações longitudinais entre fatores sociais individuais e comunitários no senso de coerência e nas condições de saúde bucal de escolares no município de Santa Maria, RS, Brasil. Esta pesquisa trata-se de uma coorte iniciado no ano de 2010 com 639 pré-escolares (1-5 anos) no qual se propõe uma quarta etapa de avaliação dos indivíduos que compõe a amostra, totalizando 10 anos de acompanhamento. As questões referentes aos fatores demográficos, condições socioeconômicas e fatores comportamentais serão obtidas através de um questionário semiestruturado aplicado aos pais/responsáveis dos escolares. Além disso, os escolares responderão questões referentes ao senso de coerência e outras medidas subjetivas. Os dados a respeito das condições bucais serão obtidos através de exames clínicos realizados por examinadores previamente treinados e calibrados. As variáveis clínicas consideradas serão cárie, traumatismo dentário, sangramento gengival, presença de placa visível, maloclusão e dor dentária. Modelagem de equações estruturais (MEE) será utilizada para testar as inter-relações entre o capital social individual e comunitário (como principais preditores) com SDC e resultados de saúde bucal (desfechos).

Objetivo da Pesquisa:

Explorar as inter-relações longitudinais entre fatores sociais individuais e comunitários no senso

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Bairro: Camobi **CEP:** 97.105-970
UF: RS **Município:** SANTA MARIA
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Continuação do Parecer: 3.425.591

de coerência e nas condições de saúde bucal de escolares no município de Santa Maria, RS, Brasil.

Avaliação dos Riscos e Benefícios:

Considerando-se as características do projeto, a descrição de riscos e benefícios apresentada pode ser considerada suficiente.

Comentários e Considerações sobre a Pesquisa:

.

Considerações sobre os Termos de apresentação obrigatória:

Os termos de apresentação obrigatória podem ser considerados suficientes.

Recomendações:

Veja no site do CEP - <http://w3.ufsm.br/nucleodecomites/index.php/cep> - na aba "orientações gerais", modelos e orientações para apresentação dos documentos. ACOMPANHE AS ORIENTAÇÕES DISPONÍVEIS, EVITE PENDÊNCIAS E AGILIZE A TRAMITAÇÃO DO SEU PROJETO.

Conclusões ou Pendências e Lista de Inadequações:

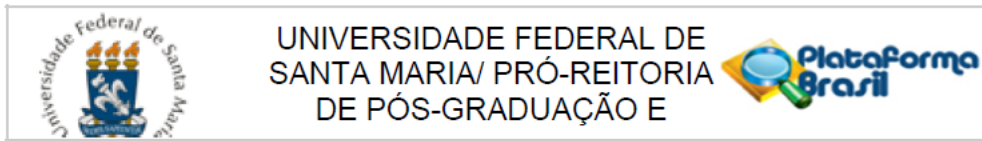
.

Considerações Finais a critério do CEP:

Este parecer foi elaborado baseado nos documentos abaixo relacionados:

Tipo Documento	Arquivo	Postagem	Autor	Situação
Informações Básicas do Projeto	PB_INFORMAÇÕES_BÁSICAS_DO_PROJETO_1331113.pdf	27/06/2019 15:35:37		Aceito
TCLE / Termos de Assentimento / Justificativa de Ausência	TermoAssentimento_mod.pdf	27/06/2019 15:32:32	Thiago Machado Ardenghi	Aceito
Outros	Carta_ao_CEP.pdf	27/06/2019 15:29:54	Thiago Machado Ardenghi	Aceito
Outros	Autorizacao_munic.pdf	27/06/2019 15:29:33	Thiago Machado Ardenghi	Aceito

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Continuação do Parecer: 3.425.591

Outros	autorizacao_estad.pdf	27/06/2019 15:28:57	Thiago Machado Ardenghi	Aceito
TCLE / Termos de Assentimento / Justificativa de Ausência	TCLE_mod.pdf	27/06/2019 15:25:36	Thiago Machado Ardenghi	Aceito
TCLE / Termos de Assentimento / Justificativa de Ausência	TermoConfidencialidadenovo.pdf	22/05/2019 12:11:40	Thiago Machado Ardenghi	Aceito
TCLE / Termos de Assentimento / Justificativa de Ausência	TermoConfidencialidade.pdf	12/04/2019 12:14:19	Thiago Machado Ardenghi	Aceito
Cronograma	cronograma.pdf	10/04/2019 09:49:59	Thiago Machado Ardenghi	Aceito
Declaração de Instituição e Infraestrutura	Autorizacao.pdf	10/04/2019 09:45:32	Thiago Machado Ardenghi	Aceito
Projeto Detalhado / Brochura Investigador	projeto.pdf	10/04/2019 09:45:02	Thiago Machado Ardenghi	Aceito
Folha de Rosto	folharosto.pdf	10/04/2019 09:44:43	Thiago Machado Ardenghi	Aceito

Situação do Parecer:

Aprovado

Necessita Apreciação da CONEP:

Não

SANTA MARIA, 28 de Junho de 2019

Assinado por:
CLAUDEMIR DE QUADROS
(Coordenador(a))

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ANEXO C - NORMAS PARA PUBLICAÇÃO NO PERIÓDICO QUALITY OF LIFE RESEARCH

Article Types

Quality of Life Research welcomes scientific articles in the following categories:

- **Original Articles**

Original articles are a maximum of 4,000 words, exclusive of a 250-word structured abstract, figures, tables, and references. We encourage submissions of shorter length if the empirical study can be presented concisely. We also make authors aware of the option to publish additional detail as online appendices. We are particularly interested in studies that utilize patient-reported outcomes, focusing on clinical and policy applications of (health-related) quality-of-life research; showcasing quantitative and qualitative methodological advances; and/or describing instrument development.

Original articles describe work that is not already published elsewhere or directly uses statements from previously published materials without appropriate acknowledgement or referencing. For example, if the submitted work forms part of a thesis dissertation or the abstract was published as part of conference proceedings, these should be acknowledged. If taking direct statements from published sources, these should be appropriately referenced.

- **Registered Reports**

The journal is pleased to offer Registered Reports for authors submitting to the journal. To learn more about this article type.

- **Letters to the editor**

Quality of Life Research accepts on occasion letters to the editor. These letters are published at the Co-Editors in Chief's discretion. Letters would be expected to make a substantial informative point and usually cover material such as responses to published articles or viewpoints (usually of more than an individual, e.g. patient groups, scientific societies, stakeholder organizations, international research consortia). As with commentaries, letters can also be submitted on invitation of the editors. Letters are not for general news sharing or to summarize results of articles published elsewhere. Letters to the editor will be reviewed by the Co-Editors in Chief, and if necessary, by drawing on additional editorial board members. In the case of letters that are in direct response to work published in Quality of Life Research, the original handling Associate Editor will be invited to review.

The submission format for a letter is a maximum length of 1000 words; no abstract; no sections; no graphs/figures; and no tables are permitted. The manuscript should have at most 5 references. A maximum of three authors are permitted, and only first author's main affiliation should be included

- Other Types of Articles

The journal also publishes commentaries and editorials; reviews of the literature; reviews of recent books and software advances; and abstracts presented at the annual meeting of the International Society of Quality of Life Research conference. These articles should be as long as needed to convey the desired information, and no more than 4,000 words in length. To the extent that it is possible, a structured abstract is appreciated.

Language

We appreciate any efforts that you make to ensure that the language usage is corrected before submission using standard United States or United Kingdom English. This will greatly improve the legibility of your paper if English is not your first language.

Plain English Summary

All submitting authors in Quality of Life Research have the opportunity to include a Plain English summary in addition to the Abstract. The plain English summary is a brief summary of the study written for the general public rather than for specialists. It is not a scientific abstract. Use clear and simple language, avoiding jargon, abbreviations, technical terms, uncommon words, and long sentences wherever possible.

Please address the following questions in your summary paragraph:

1. Why is this study needed?
2. What is the key problem/issue/question this manuscript addresses?
3. What is the main point of your study?
4. What are your main results and what do they mean?

The recommended length for the summary is 100-200 words and it should not exceed 250 words. Each question above should be addressed briefly (i.e., 1-2 sentences).

Please include your plain English summary as a separate submission file, and additionally within the main body of your manuscript file. The plain English summary should be inserted immediately after the official scientific abstract within the manuscript file under the heading "Plain English summary".

By adding a plain English summary, we hope to broaden the reach of the article and bring it to the attention of a more general audience. Researchers are trained to be highly focused, specific, and conservative with extrapolation and speculation. These attributes are useful for scientific

publications, but not for wider public understanding. Many non-scientists have difficulty understanding technical terms and jargon, and the public requires more context-setting by way of introduction and more help drawing a conclusion.

An Example from the Journal of Eating Disorders

Original Manuscript

www.jeatdisord.biomedcentral.com/articles/10.1186/s40337-019-0264-0

Binge Eating Disorder is the most common eating disorder. Still, this disorder is often not addressed by the health care system, and current treatment shows poor results on a large group of these patients. Difficulties in relating to own body are linked to the development and maintenance of eating disorders in previous research and seem to influence treatment results and the risk of relapse. Basic Body Awareness Therapy is a psychomotor physiotherapeutic treatment addressing the relation to one's own body. In this study, we have explored in-depth the experiences of two patients with Binge Eating Disorder during their treatment-process with Basic Body Awareness Therapy. This study indicates that changes in how these patients related to their own bodies during the treatment processes were meaningful to them and implied a movement toward well-being and accepting one's own body. Findings from this study inspire more research on body awareness raising approaches in the treatment of patients with Binge Eating Disorder.

Manuscript Submission

Manuscript Submission

Submission of a manuscript implies: that the work described has not been published before; that it is not under consideration for publication anywhere else; that its publication has been approved by all co-authors, if any, as well as by the responsible authorities – tacitly or explicitly – at the institute where the work has been carried out. The publisher will not be held legally responsible should there be any claims for compensation.

Permissions

Authors wishing to include figures, tables, or text passages that have already been published elsewhere are required to obtain permission from the copyright owner(s) for both the print and online format and to include evidence that such permission has been granted when submitting their papers. Any material received without such evidence will be assumed to originate from the authors.

Online Submission

Please follow the hyperlink “Submit manuscript” and upload all of your manuscript files following the instructions given on the screen.

Source Files

Please ensure you provide all relevant editable source files at every submission and revision. Failing to submit a complete set of editable source files will result in your article not being considered for review. For your manuscript text please always submit in common word processing formats such as .docx or LaTeX.

Editorial Procedure

Single-blind peer review

This journal follows a single-blind reviewing procedure.

Title Page

Title Page

Please make sure your title page contains the following information.

Title

The title should be concise and informative.

Author information

- The name(s) of the author(s)
- The affiliation(s) of the author(s), i.e. institution, (department), city, (state), country
- A clear indication and an active e-mail address of the corresponding author
- If available, the 16-digit ORCID of the author(s)

If address information is provided with the affiliation(s) it will also be published.

For authors that are (temporarily) unaffiliated we will only capture their city and country of residence, not their e-mail address unless specifically requested.

Abstract

Please provide a structured abstract of 150 to 250 words which should be divided into the following sections:

- Purpose (stating the main purposes and research question)
- Methods
- Results
- Conclusion

For life science journals only (when applicable)

- Trial registration number and date of registration for prospectively registered trials
- Trial registration number and date of registration followed by “retrospectively registered”, for prospectively registered trials

Keywords

Please provide 4 to 6 keywords which can be used for indexing purposes.

Please note:

The Title Page should also state the word count for the manuscript (exclusive of abstract, figures, tables, and references).

Text**Text Formatting**

Manuscripts should be submitted in Word.

- Use a normal, plain font (e.g., 10-point Times Roman) for text.
- Use italics for emphasis.
- Use the automatic page numbering function to number the pages.
- Do not use field functions.
- Use tab stops or other commands for indents, not the space bar.
- Use the table function, not spreadsheets, to make tables.
- Use the equation editor or MathType for equations.
- Save your file in docx format (Word 2007 or higher) or doc format (older Word versions).

Manuscripts with mathematical content can also be submitted in LaTeX.

Headings

Please use no more than three levels of displayed headings.

Abbreviations

Abbreviations should be defined at first mention and used consistently thereafter.

Footnotes

Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables.

Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data).

Footnotes to the title or the authors of the article are not given reference symbols.

Always use footnotes instead of endnotes.

Acknowledgments

Acknowledgments of people, grants, funds, etc. should be placed in a separate section on the title page. The names of funding organizations should be written in full.

Scientific Style

- Please always use internationally accepted signs and symbols for units (SI units).

•Generic names of drugs and pesticides are preferred; if trade names are used, the generic name should be given at first mention.

References

Citation

Reference citations in the text should be identified by numbers in square brackets. Some examples:

1. Negotiation research spans many disciplines [3].
2. This result was later contradicted by Becker and Seligman [5].
3. This effect has been widely studied [1-3, 7].

Authors are encouraged to follow official APA version 7 guidelines on the number of authors included in reference list entries (i.e., include all authors up to 20; for larger groups, give the first 19 names followed by an ellipsis and the final author's name). However, if authors shorten the author group by using et al., this will be retained.

Reference list

The list of references should only include works that are cited in the text and that have been published or accepted for publication. Personal communications and unpublished works should only be mentioned in the text.

The entries in the list should be numbered consecutively.

Journal names and book titles should be italicized.

If available, please always include DOIs as full DOI links in your reference list (e.g. "https://doi.org/abc").

•Journal article

Grady, J. S., Her, M., Moreno, G., Perez, C., & Yelinek, J. (2019). Emotions in storybooks: A comparison of storybooks that represent ethnic and racial groups in the United States. *Psychology of Popular Media Culture*, 8(3), 207–217. <https://doi.org/10.1037/ppm0000185>

•Article by DOI

Hong, I., Knox, S., Pryor, L., Mroz, T. M., Graham, J., Shields, M. F., & Reistetter, T. A. (2020). Is referral to home health rehabilitation following inpatient rehabilitation facility associated with 90-day hospital readmission for adult patients with stroke? *American Journal of Physical Medicine & Rehabilitation*. Advance online publication. <https://doi.org/10.1097/PHM.0000000000001435>

•Book

Sapolsky, R. M. (2017). *Behave: The biology of humans at our best and worst*. Penguin Books.

•Book chapter

Dillard, J. P. (2020). Currents in the study of persuasion. In M. B. Oliver, A. A. Raney, & J. Bryant (Eds.), *Media effects: Advances in theory and research* (4th ed., pp. 115–129). Routledge.

•Online document

Fagan, J. (2019, March 25). Nursing clinical brain. OER Commons. Retrieved January 7, 2020, from <https://www.oercommons.org/authoring/53029-nursing-clinical-brain/view>

Statements & Declarations

The following statements must be included in your submitted manuscript under the heading 'Declarations'. This should be placed after the References sections. Please note that submissions that do not include required statements will be returned incomplete.

Funding

Please describe any sources of funding that have supported the work. The statement should include details of any grants received (please give the name of the funding agency and grant number).

Example statements:

“This work was supported by [...] (Grant numbers [...] and [...]). Author A.B. has received research support from Company A.”

“The authors declare that no funds, grants, or other support were received during the preparation of this manuscript.”

Competing Interests

Authors are required to disclose financial or non-financial interests that are directly or indirectly related to the work submitted for publication. Interests within the last 3 years of beginning the work (conducting the research and preparing the work for submission) should be reported. Interests outside the 3-year time frame must be disclosed if they could reasonably be perceived as influencing the submitted work.

Example statements:

“Financial interests: Author A and B declare they have no financial interests. Author C has received speaker and consultant honoraria from Company M. Dr. C has received speaker honorarium and research funding from Company M and Company N. Author D has received travel support from Company O. Non-financial interests: Author D has served on advisory boards for Company M and Company N.”

“The authors have no relevant financial or non-financial interests to disclose.”

Please refer to the “Competing Interests” section below for more information on how to complete these sections.

Author Contributions

Authors are encouraged to include a statement that specifies the contribution of every author to the research and preparation of the manuscript.

Example statement:

“All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by [full name], [full name] and [full name]. The first draft of the manuscript was written by [full name] and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.”

Please refer to the “Authorship Principles ” section below for more information on how to complete this section.

In addition to the above, manuscripts that report the results of studies involving humans and/or animals should include the following declarations:

Ethics approval

Authors of research involving human or animal subjects should include a statement that confirms that the study was approved (or granted exemption) by the appropriate institutional and/or national research ethics committee (including the name of the ethics committee and reference number, if available). For research involving animals, their data or biological material, authors should supply detailed information on the ethical treatment of their animals in their submission. If a study was granted exemption or did not require ethics approval, this should also be detailed in the manuscript.

“This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of University B (Date../No....).”

“This is an observational study. The XYZ Research Ethics Committee has confirmed that no ethical approval is required.”

For detailed information on relevant ethical standards and criteria, please refer to the sections on “Research involving human participants, their data or biological material”, “Research involving animals, their data or biological material”.

Consent to participate

For all research involving human subjects, freely-given, informed consent to participate in the study must be obtained from participants (or their parent or legal guardian in the case of children under 16) and a statement to this effect should appear in the manuscript.

Example statement:

“Informed consent was obtained from all individual participants included in the study.”

“Written informed consent was obtained from the parents.”

Please refer to the section on “Informed Consent” for additional help with completing this information.

Consent to publish

Individuals may consent to participate in a study, but object to having their data published in a journal article. If your manuscript contains any individual person’s data in any form (including any individual details, images or videos), consent for publication must be obtained from that person, or in the case of children, their parent or legal guardian. This is in particular applicable to case studies. A statement confirming that consent to publish has been received from all participants should appear in the manuscript.

Example statement:

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Randomised trials ([CONSORT](#)) and Study protocols ([SPIRIT](#))

Observational studies ([STROBE](#))

Systematic reviews and meta-analyses ([PRISMA](#)) and protocols ([Prisma-P](#))

Diagnostic/prognostic studies ([STARD](#)) and ([TRIPOD](#))

Case reports ([CARE](#))

Clinical practice guidelines (AGREE) and (RIGHT)

Qualitative research (SRQR) and (COREQ)

Animal pre-clinical studies (ARRIVE)

Quality improvement studies (SQUIRE)

Economic evaluations (CHEERS)

Summary of requirements

The above should be summarized in a statement and placed in a 'Declarations' section before the reference list under a heading of 'Ethics approval'.

Examples of statements to be used when ethics approval has been obtained:

- All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The study was approved by the Bioethics Committee of the Medical University of A (No. ...).
- This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of University B (Date.../No. ...).
- Approval was obtained from the ethics committee of University C. The procedures used in this study adhere to the tenets of the Declaration of Helsinki.
- The questionnaire and methodology for this study was approved by the Human Research Ethics committee of the University of D (Ethics approval number: ...).

Examples of statements to be used for a retrospective study:

- Ethical approval was waived by the local Ethics Committee of University A in view of the retrospective nature of the study and all the procedures being performed were part of the routine care.
- This research study was conducted retrospectively from data obtained for clinical purposes. We consulted extensively with the IRB of XYZ who determined that our study did not need ethical approval. An IRB official waiver of ethical approval was granted from the IRB of XYZ.
- This retrospective chart review study involving human participants was in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The Human Investigation Committee (IRB) of University B approved this study.

Examples of statements to be used when no ethical approval is required/exemption granted:

- This is an observational study. The XYZ Research Ethics Committee has confirmed that no ethical approval is required.

- The data reproduced from Article X utilized human tissue that was procured via our Biobank AB, which provides de-identified samples. This study was reviewed and deemed exempt by our XYZ Institutional Review Board. The BioBank protocols are in accordance with the ethical standards of our institution and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Authors are responsible for correctness of the statements provided in the manuscript. See also Authorship Principles. The Editor-in-Chief reserves the right to reject submissions that do not meet the guidelines described in this section.

Informed consent

All individuals have individual rights that are not to be infringed. Individual participants in studies have, for example, the right to decide what happens to the (identifiable) personal data gathered, to what they have said during a study or an interview, as well as to any photograph that was taken. This is especially true concerning images of vulnerable people (e.g. minors, patients, refugees, etc) or the use of images in sensitive contexts. In many instances authors will need to secure written consent before including images.

Identifying details (names, dates of birth, identity numbers, biometrical characteristics (such as facial features, fingerprint, writing style, voice pattern, DNA or other distinguishing characteristic) and other information) of the participants that were studied should not be published in written descriptions, photographs, and genetic profiles unless the information is essential for scholarly purposes and the participant (or parent/guardian if the participant is a minor or incapable or legal representative) gave written informed consent for publication. Complete anonymity is difficult to achieve in some cases. Detailed descriptions of individual participants, whether of their whole bodies or of body sections, may lead to disclosure of their identity. Under certain circumstances consent is not required as long as information is anonymized and the submission does not include images that may identify the person.

Informed consent for publication should be obtained if there is any doubt. For example, masking the eye region in photographs of participants is inadequate protection of anonymity. If identifying characteristics are altered to protect anonymity, such as in genetic profiles, authors should provide assurance that alterations do not distort meaning.

Exceptions where it is not necessary to obtain consent:

- Images such as x rays, laparoscopic images, ultrasound images, brain scans, pathology slides unless there is a concern about identifying information in which case, authors should ensure that consent is obtained.

- Reuse of images: If images are being reused from prior publications, the Publisher will assume that the prior publication obtained the relevant information regarding consent. Authors should provide the appropriate attribution for republished images.

Consent and already available data and/or biologic material

Regardless of whether material is collected from living or dead patients, they (family or guardian if the deceased has not made a pre-mortem decision) must have given prior written consent. The aspect of confidentiality as well as any wishes from the deceased should be respected.

Data protection, confidentiality and privacy

When biological material is donated for or data is generated as part of a research project authors should ensure, as part of the informed consent procedure, that the participants are made aware what kind of (personal) data will be processed, how it will be used and for what purpose. In case of data acquired via a biobank/biorepository, it is possible they apply a broad consent which allows research participants to consent to a broad range of uses of their data and samples which is regarded by research ethics committees as specific enough to be considered “informed”. However, authors should always check the specific biobank/biorepository policies or any other type of data provider policies (in case of non-bio research) to be sure that this is the case.

Consent to Participate

For all research involving human subjects, freely-given, informed consent to participate in the study must be obtained from participants (or their parent or legal guardian in the case of children under 16) and a statement to this effect should appear in the manuscript. In the case of articles describing human transplantation studies, authors must include a statement declaring that no organs/tissues were obtained from prisoners and must also name the institution(s)/clinic(s)/department(s) via which organs/tissues were obtained. For manuscripts reporting studies involving vulnerable groups where there is the potential for coercion or where consent may not have been fully informed, extra care will be taken by the editor and may be referred to the Springer Nature Research Integrity Group.

Consent to Publish

Individuals may consent to participate in a study, but object to having their data published in a journal article. Authors should make sure to also seek consent from individuals to publish their data prior to submitting their paper to a journal. This is in particular applicable to case studies. A consent to publish form can be found [here](#).

Summary of requirements

The above should be summarized in a statement and placed in a ‘Declarations’ section before the reference list under a heading of ‘Consent to participate’ and/or ‘Consent to publish’. Other declarations include Funding, Competing interests, Ethics approval, Consent, Data and/or Code availability and Authors’ contribution statements.

Please see the various examples of wording below and revise/customize the sample statements according to your own needs.

Sample statements for "**Consent to participate**":

Informed consent was obtained from all individual participants included in the study.

Informed consent was obtained from legal guardians.

Written informed consent was obtained from the parents.

Verbal informed consent was obtained prior to the interview.

Sample statements for "**Consent to publish**":

The authors affirm that human research participants provided informed consent for publication of the images in Figure(s) 1a, 1b and 1c.

The participant has consented to the submission of the case report to the journal.

Patients signed informed consent regarding publishing their data and photographs.

Sample statements if identifying information about participants is available in the article:

Additional informed consent was obtained from all individual participants for whom identifying information is included in this article.

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Images will be removed from publication if authors have not obtained informed consent or the paper may be removed and replaced with a notice explaining the reason for removal.

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List of Repositories

Research Data Policy

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If the journal that you're submitting to uses double-blind peer review and you are providing reviewers with access to your data (for example via a repository link, supplementary information or data on request), it is strongly suggested that the authorship in the data is also blinded. There are [data repositories that can assist with this](#) and/or will create a link to mask the authorship of your data.

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APÊNDICE A – TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

Termo de Consentimento Livre e Esclarecido

Título do estudo: **Influência do capital social no desenvolvimento do senso de coerência e nas condições bucais de escolares: uma coorte de 10 anos**

Pesquisador responsável: Professor Dr. Thiago Machado Ardenghi

Instituição: Universidade Federal de Santa Maria/Departamento de Estomatologia

Telefone e endereço: 55-3220-9272. Av. Roraima - Camobi, Santa Maria - RS – 2º andar (Odontopediatria) - Universidade Federal de Santa Maria. CEP 97105-900 - Santa Maria - RS.

Este termo tem como objetivo informar, esclarecer, pedir a sua autorização e convidar o(a) Sr./Sra. e seu/sua filho(a) a participarem da pesquisa intitulada **“Influência do capital social no desenvolvimento do senso de coerência e nas condições bucais de escolares: uma coorte de 10 anos”** a ser desenvolvida pela Cirurgiã-dentista Jessica Klöckner Knorst e pelo professor Dr. Thiago Machado Ardenghi. Esta pesquisa tem como objetivo avaliar as inter-relações longitudinais entre fatores sociais individuais e contextuais no senso de coerência e nas condições de saúde bucal de escolares no município de Santa Maria, RS, Brasil.

A pesquisa será desenvolvida na Clínica de Odontopediatria da Universidade Federal de Santa Maria (UFSM) e, caso não seja possível o comparecimento na clínica, os pesquisadores irão até a escola do seu filho ou até a sua casa. Uma aluna de Doutorado do Curso de Odontologia da UFSM fará um exame da boca do seu/sua filho (a), usando apenas um espelho odontológico e uma sonda. O Sr/Sra. responderá a algumas perguntas relacionadas à saúde bucal do seu (sua) filho (a) e sobre as características familiares como, escolaridade, hábitos de higiene e renda da família.

O escolar ou o Sr./Sra. não receberão nenhum benefício direto com a pesquisa. Como nesta pesquisa serão realizados exames odontológicos, o risco previsto pela participação de seu/sua filho (a) é mínimo, entretanto, ele (a) poderá ficar cansado (a) ao responder os questionários e durante os exames clínicos. Como benefício, o Sr. (Sra.) será informado e orientado a procurar assistência odontológica caso seja observado algum problema durante o exame do (a) seu/sua filho (a). Cabe repetir que o (a) Sr. (Sra.) será orientado a procurar um atendimento, não sendo de responsabilidade desta pesquisa dar garantia de que este atendimento seja realizado. Não haverá qualquer custo para fazer parte deste estudo. O escolar ou o Sr./Sra. não receberão qualquer remuneração por essa participação.

Todos os dados de identificação de seu/sua filho (a) serão mantidos em sigilo. O Sr (Sra) e seu/sua filho (a) poderão se recusar participar da pesquisa a qualquer momento, sem que haja qualquer problema. Para esclarecer qualquer dúvida, o (a) senhor (a) poderá falar com o pesquisador pelo telefone escrito no final deste documento.

Autorização

Eu, acredito ter sido suficientemente informado a respeito das informações que li ou que foram lidas para mim. Ficaram claros para mim quais são os propósitos do estudo, os procedimentos a serem realizados, seus desconfortos e riscos, as garantias de confidencialidade e de esclarecimentos permanentes. Ficou claro também que minha participação é isenta de despesas. Concordo voluntariamente em participar deste estudo e poderei retirar o meu consentimento a qualquer momento, antes ou durante o mesmo, sem penalidades ou prejuízo ou perda de qualquer benefício que eu possa ter adquirido, ou no meu atendimento neste serviço. Recebi uma cópia deste termo de consentimento livre e esclarecido e me foi dada a oportunidade de ler e esclarecer as minhas dúvidas.

Declaro que fui devidamente esclarecido (a), e estou de acordo com os termos acima expostos, autorizando a participação minha e a do meu/minha filho(a) nesta pesquisa.

Santa Maria, RS, ____ de _____ de 201__.

Nome legível do escolar: _____

Nome legível do responsável: _____

Assinatura do responsável: _____

Qualquer esclarecimento entre em contato com:

Comitê de Ética em Pesquisa da Universidade Federal de Santa Maria:

Av. Roraima, 1000 – Prédio da Reitoria, 2º andar - CEP: 97105-900 – Santa Maria – RS

Telefones: (55) 3220 9362 e-mail: cep.ufsm@gmail.com

Jessica Klöckner Knorst (pesquisadora responsável):

Telefone: (55) 9 96739505

E-mail: jessicaknorst1@gmail.com

Prof. Dr. Thiago Machado Ardenghi (Orientador da pesquisa):

Universidade Federal de Santa Maria

Av. Roraima - Camobi, Santa Maria - RS – 2º andar (Odontopediatria) - Universidade Federal de Santa Maria. CEP 97105-900 - Santa Maria - RS.

Telefone 55-3220-9272.

APÊNDICE B – QUESTIONÁRIO APLICADO NO T1

QUESTIONÁRIO – COORTE 2020

Nome: _____	Idade: _____
Endereço: _____	
Bairro: _____	
Escola: _____	Telefones: _____

Questionário demográfico e socioeconômico

- 1) Estrutura familiar - você mora com? Pai e mãe Só com a mãe Só com o pai Outro
- 2) Quantos cômodos tem na sua casa (exceto banheiro)? _____
- 3) Contando com você, quantas pessoas moram na sua casa ou apartamento? _____
- 4) Qual é o rendimento mensal, em reais, de todos que moram na casa? _____
- 5) De que raça você se considera? Branco Parda Preta Amarela Indígena
- 6) Escolaridade materna: Não estudou 1º grau incompleto 1º grau completo 2º grau incompleto 2º grau completo 3º grau incompleto 3º grau completo

Questionário comportamental (higiene, uso de serviços, dieta e hábitos nocivos)

- 7) Como você considera ser desempenho escolar? Excelente Bom Regular Ruim
- 8) No último mês, quantas vezes por dia você escovou os seus dentes? Não escovo os dentes diariamente Uma vez por dia Duas vezes por dia Três vezes por dia Quatro ou mais vezes por dia
- 9) Você utiliza fio dental? Não utilizo Menos de uma vez ao dia 1 vez por dia
- 10) Quanto medo você tem de visitar um dentista? De jeito nenhum Um pouco Muito
- 11) No último ano (12 meses) quantas vezes você foi ao dentista? Nenhuma vez 1 vez 2 vezes 3 vezes ou mais
- 12) Qual foi o motivo da última consulta? Dor de dente Dor na boca Batidas e quedas Rotina Aparelho Outros: _____ Nunca fui.
- 13) Qual foi o tipo de serviço que você procurou na última consulta? Dentista particular Público
- 14) Você acha que necessita de tratamento dentário atualmente? Não Sim
- 15) Com que frequência você consome alimentos ou bebidas açucaradas? Três ou mais vezes por dia Duas vezes por dia Pelo menos uma vez por dia Menos de uma vez por dia; Nunca/quase nunca
- 16) Você range seus dentes enquanto dorme? Sim Não
- 17) Como você classificaria a qualidade do seu sono? Eu durmo bem/boa qualidade Eu durmo mal
- 18) No último mês, quantos dias você fumou cigarros? Nunca experimentei ____ dia(s)
- 19) No último mês, quantos dias você consumiu bebida alcoólica? Não bebi ____ dia(s)
- 20) Qual droga você já experimentou? Nenhuma Nome da droga: _____

Capital social

- 21) Você pratica alguma religião? Não Sim, menos de uma vez por mês Sim, pelo menos uma vez por mês
- 22) Você visitou algum amigo, vizinho ou familiar ou algum deles visitou você nos últimos 12 meses? Não Sim, menos de uma vez por mês Sim, pelo menos uma vez por mês
- 23) Nos últimos 12 meses, você foi membro de algum grupo voluntário ou algo do tipo? Sim Não
- 24) Caso tenha algo infeliz acontecendo com você, alguém te ajudaria nessa situação? Sim Não
- 25) Nos últimos 12 meses, você se uniu a outras pessoas em sua vizinhança ou bairro para tratar de questões importantes e de interesse geral? Sim Não
- 26) Seus vizinhos e amigos podem ser confiáveis? Sim Às vezes Não
- 27) A maioria das pessoas no seu bairro geralmente tem boas relações umas com as outras? Sim Às vezes Não
- 28) Das opções abaixo, assiná-le as que estão presentes no bairro em que você mora: Templo religioso (igreja, centro espírita, umbanda) Grupo de voluntários Centros de lazer Associação de moradores Escola Unidade básica de saúde (UBS) Estratégia de Saúde da Família (ESF) Parada de ônibus

APÊNDICE C – QUESTIONÁRIO APLICADO NO T2

QUESTIONÁRIO – ESTUDO PÓS COVID-19 (COORTE 2020)

Nome: _____ Idade: _____

- 1) **Com relação ao distanciamento social que está sendo orientado pelas autoridades de saúde, ou seja, ficar em casa e evitar contato com outras pessoas, quanto acha que estão conseguindo fazer?** () Praticamente isolados () Bastante () Mais ou menos () Pouco () Muito pouco
- 2) **No último mês, quantas vezes por dia você escovou os seus dentes?** () Não escovo os dentes diariamente () Uma vez por dia () Duas vezes por dia () Três vezes por dia () Quatro ou mais vezes por dia
- 3) **Você utiliza fio dental?** () Não utilizo () Menos de uma vez ao dia () 1 vez por dia
- 4) **Quanto medo você tem de visitar um dentista?** () De jeito nenhum () Um pouco () Muito
- 5) **Desde o início da pandemia, quantas vezes você foi ao dentista?** () Nenhuma vez () 1 vez () 2 vezes () 3 vezes ou mais
- 6) **Qual foi o motivo da última consulta?** () Dor de dente () Dor na boca () Batidas e quedas () Rotina () Aparelho () Outros: _____ () Nunca fui.
- 7) **Você acha que necessita de tratamento dentário atualmente?** () Não () Sim
- 8) **Com que frequência você consome alimentos ou bebidas açucaradas?** () Três ou mais vezes por dia () Duas vezes por dia () Pelo menos uma vez por dia () Menos de uma vez por dia; () Nunca/quase nunca
- 9) **Você range seus dentes enquanto dorme?** () Sim () Não
- 10) **Como você classificaria a qualidade do seu sono?** () Eu durmo bem/boa qualidade () Eu durmo mal
- 11) **Qual é o rendimento mensal, em reais, de todos que moram na casa?** _____
- 12) **Alguém da família perdeu o emprego devido a pandemia?** () Não () Sim

APÊNDICE D – QUESTIONÁRIO APLICADO NO T3

QUESTIONÁRIO – COVID-19 (COORTE 2021)

Nome: _____ Idade: _____

Questionário para o responsável

- 1) Com relação ao distanciamento social que está sendo orientado pelas autoridades de saúde, ou seja, ficar em casa e evitar contato com outras pessoas, quanto acha que estão conseguindo fazer? () Praticamente isolados () Bastante () Mais ou menos () Pouco () Muito pouco
- 2) Qual é o rendimento mensal, em reais, de todos que moram na casa? _____
- 3) Alguém da família perdeu o emprego devido à pandemia? () Sim () Não
- 4) Alguém que mora com você durante a pandemia recebeu auxílio emergencial do governo? () Sim () Não () Não sei
- 5) Caso tenha algo infeliz acontecendo com você, alguém te ajudaria nessa situação? () Sim () Não
- 6) Seus vizinhos e amigos podem ser confiáveis? () Sim () Às vezes () Não
- 7) A maioria das pessoas no seu bairro geralmente tem boas relações umas com as outras? () Sim () Às vezes () Não
- 8) Você teve medo de levar seu filho no dentista nesse último ano, devido à pandemia? () De jeito nenhum () Um pouco () Muito

Questionário comportamental para o adolescente (higiene, uso de serviços, dieta e hábitos nocivos)

- 9) No último mês, quantas vezes por dia você escovou os seus dentes? () Não escovo os dentes diariamente () Uma vez por dia () Duas vezes por dia () Três vezes por dia () Quatro ou mais vezes por dia
- 10) Você utiliza fio dental? () Não utilizo () Menos de uma vez ao dia () 1 vez por dia
- 11) Com que frequência você consome alimentos ou bebidas açucaradas? () Três ou mais vezes por dia () Duas vezes por dia () Pelo menos uma vez por dia () Menos de uma vez por dia () Nunca/quase nunca
- 12) Você tem cárie (buraco no dente)? () Sim () Não () Não sei
- 13) Você percebe algum sangramento na gengiva quando escova os dentes ou passa fio dental? () Sim () Não
- 14) No último ano você teve dor de dente? () Sim () Não
- 15) Você range seus dentes enquanto dorme? () Sim () Não
- 16) Como você classificaria a qualidade do seu sono? () Eu durmo bem/boa qualidade () Eu durmo mal
- 17) Quanto medo você tem de visitar um dentista? () De jeito nenhum () Um pouco () Muito
- 18) Desde o início da pandemia, quantas vezes você foi ao dentista? () Nenhuma vez () 1 vez () 2 vezes () 3 vezes ou mais
- 19) Qual foi o motivo da última consulta? () Dor de dente () Dor na boca () Batidas e quedas () Rotina () Aparelho () Outros: _____ () Nunca fui.
- 20) Você acha que necessita de tratamento dentário atualmente? () Sim () Não