ANA CLARA FERREIRA DE PAIVA

TRAÇOS DE TEMPERAMENTO ESTÃO ASSOCIADOS AO MEDO E ANSIEDADE ODONTOLÓGICOS EM CRIANÇAS E ADOLESCENTES? UMA REVISÃO SISTEMÁTICA

Faculdade de Odontologia
Universidade Federal de Minas Gerais
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Dissertação apresentada ao Colegiado de Pós-graduação da Faculdade de Odontologia da Universidade Federal de Minas Gerais, como requisito parcial para obtenção do grau de mestre em Odontologia – área de concentração em Odontopediatria

Orientadora: Profa. Dra. Cristiane Baccin Bendo
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FOLHA DE APROVAÇÃO

Traços de temperamento estão associados ao medo e ansiedade odontológicos em crianças e adolescentes? Uma revisão sistemática

ANA CLARA FERREIRA DE PAIVA

Dissertação submetida à Banca Examinadora designada pelo Colegiado do Programa de Pós-Graduação em Odontologia, como requisito para obtenção do grau de Mestre, área de concentração Odontopediatria.

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meus amigos e familiares que torcem por mim e acompanharam de perto o meu trabalho.

"Enquanto eu tiver perguntas e não houver resposta, continuarei a escrever."

(Clarice Lispector)

RESUMO

Essa revisão sistemática, foi realizada com o objetivo de verificar a associação e/ou correlação de traços de temperamento com o medo e ansiedade odontológicos de crianças e adolescentes. Registrada na plataforma PROSPERO (#CRD42020207578), seguiu-se a estratégia PEO para seu delineamento, na qual crianças e adolescentes foram a população de interesse (P), os temperamentos foram a exposição (E) e o medo/ansiedade odontológicos o desfecho (O). Foram incluídos estudos observacionais sem restrições de ano ou idioma de publicação. Foi realizada uma busca sistematizada, por dois pesquisadores independentes, nas seguintes bases de dados: PubMed, Web of Science, Scopus, Lilacs, Embase, Cochrane e PsycINFO, complementada por busca na literatura cinzenta, sendo atualizada até abril/2021. Os seguintes dados dos artigos incluídos foram extraídos e sintetizados: local, ano, desenho de estudo, local de realização da coleta de dados, características dos participantes, métodos de avaliação das variáveis exposição e desfecho, resultados e conclusão. A análise de qualidade foi realizada pelo critério de Fowkes e Fulton e a certeza da evidência pelo método GRADE. Do total de 1362 artigos recuperados, onze foram incluídos. A heterogeneidade dos dados inviabilizou a meta-análise. Síntese qualitativa por subgrupos demonstrou associação/correlação positiva entre os traços de temperamento de emocionalidade/neuroticismo, impulsividade e timidez com o medo/ansiedade odontológicos em crianças e adolescentes. Os traços de temperamento de extroversão e sociabilidade não foram associados/correlacionados com medo/ansiedade odontológicos. A qualidade metodológica dos estudos foi avaliada como baixa em 8 dos 11 artigos incluídos. A certeza da evidência encontrada foi classificada como muito baixa. Conclui-se que crianças e adolescentes com traços de temperamento como emocionalidade e timidez são mais propensos a apresentar maior medo e ansiedade odontológicos. Este resultado deve ser avaliado com cautela devido à alta heterogeneidade e ao alto risco de viés dos estudos, com muito baixa certeza de evidência.

Palavras-chave: Medo ao tratamento odontológico. Ansiedade ao tratamento odontológico. Criança. Adolescente. Temperamento. Personalidade. Ciência do comportamento

ABSTRACT

Temperament traits: are they associated to dental fear and anxiety? A systematic review

This systematic review aims to verify the association/correlation of temperament traits with dental fear and anxiety (DFA) in children and adolescents (PROSPERO #CRD42020207578). the PEO strategy: children and adolescents (P-population), temperament (E-exposure), and DFA (O-outcome). Observational studies without restrictions on year or language of publication were included. A systematic search was performed, by two independent researchers, in seven databases and grey literature, up to April/2021. The following data of the included articles were extracted and synthesized: location, year, study design, place of data collection, characteristics of the participants, methods for exposure and outcome variables, results, and conclusion. The risk of bias assessment was performed by the Fowkes and Fulton criteria and the certainty of the evidence by the GRADE method. 1362 articles were recovered and 11 were included. Qualitative synthesis by subgroups showed positive association/correlation between temperament of emotionality/neuroticism and shyness with DFA in children and adolescents. Eight studies had low methodological quality. In conclusion, children and adolescents with temperament like emotionality/neuroticism and shyness are more likely to present higher DFA. This result should be evaluated with caution due to the high heterogeneity and low methodological quality of the studies, with very low certainty of evidence.

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LISTA DE ABREVIATURAS E SIGLAS

CDFP	*Children Dental Fear Picture*
CFSS-DS	*Children Fear Survey Scale - Dental Subscale*
CI	*Confidence Interval*
CMAS-R	*Children Manifested Anxiety Scale - Revised*
COMUT	Programa de Comutação Bibliográfica
DA	*Dental Anxiety*
DAS	*Dental Anxiety Scale*
DF	*Dental Fear*
DFA	*Dental Fear and Anxiety*
DFS	*Dental Fear Survey*
DOTS-R	*Revised Dimensions of Temperament Scale*
EAS	*Emotionality, Activity and Shyness Survey*
EASI	*Emotionality, Activity, Shyness and Impulsivity Survey*
EPQ	*Eysenck's Personality Questionnaire*
EPQ-J	*Eysenck's Personality Questionnaire - Junior*
FIS	*Facial Image Scale*
FSSC-R	*Fear Survey Schedule for Children*
GASC	*General Anxiety Scale for Children*
GRADE	*Granding of Recommendations Assessment, Development and Evaluation*
MESH	*Medical Subject Headings*
PEO	*Population; Exposure; Outcome*
PRISMA	*Preferred Reporting Items for Systematic reviews and Meta-Analyses*
PSPQ	*Preschool Personality Questionnaire*
STAIC	*State Trait Anxiety Inventory*
STROBE	*Strengthening the Reporting of Observational Studies in Epidemiology*
VAS	*Visual Analogue Scale*
VPT	*Venham Picture Test*

SUMÁRIO

1 INTRODUÇÃO

Medo e ansiedade são reações normais que envolvem sentimentos negativos de forma intensa e resultam em manifestações corporais, sendo então considerados reações de sobrevivência importantes (ÖHMAN, 2008). De acordo com a Sociedade Americana de Psiquiatria o medo é a resposta à um perigo ou ameaça concreta, já a ansiedade está relacionada a antecipação desse perigo ou ameaça (APA, 2014). O medo está ligado a um perigo real e pode ser considerado uma reação pós-estímulo, já a ansiedade é uma reação que ocorre de forma prévia ao estímulo, por estar associada a antecipação do perigo (ÖHMAN, 2008). Essas reações apesar de acarretaram em condições diferentes, sendo o medo associado mais frequentemente a reações de excitabilidade para fuga ou luta e a ansiedade estar mais relacionada com um estado vigilante de tensão, visando a preparação para a ameaça futura, em determinadas situações podem se sobrepor (APA, 2014). Principalmente com crianças, essa sobreposição pode acontecer e os sentimentos se exacerbam pela dificuldade delas em entender o que está acontecendo e lidar com as reações que eles provocam (MORGAN e PORRIT, 2017).

Ao transferir esses conceitos para a odontologia, o medo odontológico (em inglês *dental fear* - DF) seria caracterizado como uma reação emocional a estímulos específicos relacionados com o ambiente odontológico, como o som da caneta de alta rotação ou o cheiro de um material odontológico. A ansiedade odontológica (em inglês *dental anxiety* - DA) é caracterizada como um estado de apreensão que resulta da antecipação de alguns pensamentos sobre a consulta odontológica (CIANETTI *et al.*, 2017; KLINGBERG e BROBERG, 2007). No entanto, ao lidar com o medo e a ansiedade odontológicos é difícil diferenciar as reações decorrentes das duas situações, por isso o termo "medo e ansiedade odontológicos" (em inglês *dental fear anxiety* - DFA) é usado para se referir a fortes sentimentos negativos associados ao tratamento odontológico e todo o seu contexto (CIANETTI *et al.*, 2017; KLINGBERG e BROBERG, 2007). E é assim que vamos nos referir a esses sentimentos neste estudo. Em 2020, uma revisão sistemática mostrou um valor médio de 23,9% (95% IC 20,4 27,3) para a prevalência de medo e ansiedade odontológicos para o grupo de 3 a 18 anos, variando a prevalência entre os grupos etários. A prevalência em pré-

escolares foi de 36,5% (95% IC 23,8, 49,2), em escolares foi de 25,8% (95% IC 19,5, 32,1) e em adolescentes foi de 13,3% (95% IC 9,5, 17,0) (GRISOLIA *et al.*, 2020).

Apesar do medo e ansiedade odontológicos serem comuns, se não forem abordados de forma adequada, podem perdurar por toda a vida, principalmente em função de um comportamento de evitação do tratamento odontológico (BERGGREN e MEYNERT, 1984). Indivíduos que sofrem de medo e ansiedade odontológicos tendem a desmarcar ou demorar mais a procurar atendimento odontológico. Embora isso cause uma falsa sensação de alívio, esses indivíduos podem ter sua saúde bucal deteriorada e quando precisam de atendimento, aumentam as chances de ser por motivo de dor ou alguma urgência, com presença de dor. Isso reduz a chance de que eles tenham experiências positivas que reduziriam o seu medo e ansiedade odontológicos (ARMFIELD *et al.*, 2007). Dessa forma, ao se deparar com uma nova consulta agendada, os sentimentos referentes ao medo e ansiedade odontológicos retornam mais fortes, e o comportamento de desmarcar a consulta se repete de uma forma cíclica (MORGAN e PORRIT, 2017).

O medo e a ansiedade odontológicos são comuns ao desenvolvimento infantil e possuem uma etiologia multifatorial, que pode ser em função de fatores endógenos ou exógenos (MORGAN e PORRIT, 2017). Pelo mecanismo proposto por Rachman (RACHMAN, 1977) para a aquisição do medo e ansiedade por fatores exógenos, três vias podem explicar o estabelecimento do medo e ansiedade odontológicos (MORGAN e PORRIT, 2017). O primeiro caminho refere-se a uma condição direta de que o medo e a ansiedade são resultado de uma situação negativa vivenciada, podendo ser um quadro de dor ou uma relação insatisfatória com o dentista (RACHMAN, 1977). A literatura demonstra que dor dentária e a experiência negativa estão associadas a maiores níveis de medo e ansiedade odontológicos (COLARES *et al.*, 2013; RAMOS-JORGE *et al.,* 2013). O segundo caminho de Rachman refere-se a uma forma indireta que é chamada de modelação e ocorre quando as crianças e adolescentes imitam o comportamento que veem dos adultos através da observação (RACHMAN, 1977). Ou seja, o medo e a ansiedade odontológicos das crianças estão sob influência do medo e ansiedade odontológicos dos pais/responsáveis (BUSATO *et al.*, 2017; SOARES *et al.*, 2017; THEMESSL-HUBER *et al.*, 2010). E o terceiro caminho que Rachman propõe é a influência de

informações obtidas de forma indireta, que ocorrem por meio de informações de outras pessoas, na escola ou por mídias que mostram visões negativas sobre odontologia (MORGAN e PORRIT, 2017; RACHMAN, 1977).

Por outro lado, há os fatores endógenos do medo e ansiedade odontológicos que estão relacionados às condições pessoais. Esses fatores podem ser idade, sexo, transtornos de ansiedade generalizada, depressão, temperamento e personalidade de cada indivíduo (ABANTO *et al.,* 2017; CALTABIANO *et al.,* 2018; KLINGBERG e BROBERG, 2007; STENEBRAND *et al.*, 2013).

Temperamentos ou traços de personalidade são termos usados na literatura para se referir a características individuais e, esses podem ser considerados importantes no cenário de medo e ansiedade odontológicos. Às vezes, o uso do termo personalidade inclui mais características do que a definição usual para temperamento e traços de personalidade (BUSS e PLOMIN, 1984). Apesar das diferenças entre os autores sobre temperamento/traços de personalidade, podemos definir como as diferenças individuais nas respostas emocionais ao ambiente, que podem ser vistos no início da infância e são relativamente estáveis ao longo da vida (BUSS e PLOMIN, 1984; ROTHBART, 2007). Os temperamentos/traços de personalidade também são um estágio inicial do desenvolvimento da personalidade do indivíduo (BUSS e PLOMIN, 1984; ROTHBART, 2007). Características relacionadas aos temperamentos/traços de personalidade de crianças e adolescentes estão presentes em alguns estudos sobre medo e ansiedade odontológicos (KLINGBERG e BROBERG, 1998, POP-JORDANOVA *et al.*, 2013).

Dentro dos conceitos de temperamento, existem algumas teorias diferentes. No entanto, as teorias de temperamento mais utilizadas nas pesquisas odontológicas se enquadram nos conceitos de Buss e Plomin (BUSS e PLOMIN, 1984) e de Eysenck (EYSENCK e EYSENCK, 1964; EYSENCK, 1992).

Emocionalidade, ou emocionalidade negativa, é o temperamento que está associado com o descontrole emocional, tendência a ficar chateado com facilidade e de forma intensa. Outro temperamento é a atividade, que está relacionada com agir de forma intensa e vigorosa em resposta a algum estímulo, com tendência a manifestação de raiva. Sociabilidade é a tendência a preferir presença de outras pessoas, ter facilidade de se sentir à vontade quando em grupo. Já a timidez, pode

ser colocada como o oposto da sociabilidade, e está relacionada à forma como o indivíduo se expressa quando está em contato com estranhos; são pessoas tímidas, ficam mais quietas e tendem a evitar interações sociais com desconhecidos. A impulsividade se assemelha com a atividade e em alguns casos deixou de ser considerado um temperamento, mas ainda existem os instrumentos que a avaliam. Dessa forma, crianças impulsivas reagem mal aos estímulos, reagindo de forma imediata (BUSS e PLOMIN, 1984).

Pela teoria de Eysenck, o neuroticismo é equivalente a emocionalidade proposta por Buss e Plomin, sendo característico de pessoas com dificuldade de se adaptarem ao estresse, apresentando uma instabilidade emocional (EYSENCK e EYSENCK, 1964). Extroversão é o temperamento que interage de forma reversa com a timidez, sendo que pessoas extrovertidas não se sentem acuadas quando na presença de outras pessoas (EYSENCK e EYSENCK, 1964). O psicoticismo, por sua vez, se caracteriza como as reações desmedidas e impensadas, muitas vezes com dificuldades de obedecer às normas sociais (EYSENCK, 1992). Eysenck ainda aborda a dimensão da não sinceridade, caracterizada pela tendência do indivíduo a não ser fiel a sua realidade, respondendo de acordo com o que pode ser socialmente aceitável (EYSENCK e EYSENCK, 1964).

O atendimento odontológico é um momento no qual a criança está sob influência de vários estímulos, muitas vezes desconhecidos, podendo ser reconhecidos por ela como ameaças. Sendo assim, a forma como as crianças reagem emocionalmente em diferentes situações pode ser uma indicação de como reagiriam em situações como o atendimento odontológico. A literatura demonstra uma possível associação do temperamento com medo e ansiedade odontológicos (JAIN *et al.*, 2019; QUINONEZ *et al.,* 1997; STENEBRAND *et al.*, 2013). No entanto, até o presente momento não foi encontrada nenhuma revisão sistemática da literatura acerca desta temática, a fim de fornecer uma síntese dos estudos primários, que forneça um maior embasamento sobre esta relação entre temperamento e medo/ansiedade odontológicos de crianças e adolescentes. O conhecimento sobre o papel do temperamento de uma criança/adolescente no medo/ansiedade odontológicos pode apoiar o odontopediatra em sua prática diária, e também como novas pesquisas sobre o tema para preencher possíveis lacunas. Portanto, o presente estudo tem como

objetivo avaliar as evidências disponíveis sobre a relação entre temperamentos e medo e ansiedade odontológicos em crianças e adolescentes de forma sistemática e sintetizar seus resultados.

2 OBEJTIVOS

2.1 Objetivo geral

- Realizar na literatura existente, uma busca bibliográfica sistematizada, de forma a avaliar as evidências sobre a relação entre temperamentos e medo e ansiedade odontológicos.

2.2 Objetivos específicos

- Avaliar a influência dos temperamentos na expressão do medo e ansiedade odontológicos em crianças e adolescentes;

- Avaliar a qualidade metodológica dos estudos sobre o tema;

- Avaliar a certeza da evidência disponível sobre esta possível relação.

3 METODOLOGIA EXPANDIDA

Esse trabalho é uma revisão sistemática de literatura que foi submetida a plataforma PROSPERO onde foi registrada com o protocolo CRD42020207578. Esse trabalho segue as orientações do PRISMA 2020 para a elaboração do artigo final (PAGE *et al.,* 2021).

3.1 Critérios de elegibilidade

Os critérios de inclusão para esta revisão sistemática foram artigos publicados que envolviam estudos observacionais (transversais, caso-controle ou coorte), sem restrições ao idioma ou ano de publicação. Para inclusão, os estudos precisavam se enquadrar nas determinações da estratégia PEO. Em função de se tratar de estudos primários que investigam associação ou correlação entre uma exposição e um desfecho, sem a presença de um comparador, optou-se por utilizar essa estratégia (MOOLA *et al.,* 2015).
- *Population* (população): Crianças e/ou adolescentes;
- *Exposure* (exposição): Temperamentos;
- *Outcome* (desfecho): Medo e ansiedade odontológicos.

Foram excluídos dessa revisão sistemática relatos de caso, revisões de literatura, estudos que avaliaram crianças e adolescentes com deficiência e estudos que usaram problemas de comportamento como sinônimo de temperamento.

3.2 Fontes de busca

Foram realizadas buscas nas seguintes bases de dados: PubMed (Biblioteca Nacional de Medicina), Web of Science (Clarivate Analytics), Scopus (Elsevier), Lilacs (VHL), Embase (Elsevier), Cochrane e PsycINFO (APA). A literatura cinzenta foi pesquisada através do Google Scholar e do Open Grey. No Google Scholar foram selecionadas as 200 primeiras referências. Busca manual na lista de

referências de cada estudo incluído na revisão sistemática foi realizada em busca de possíveis artigos elegíveis. As buscas foram realizadas até abril de 2021.

Alguns autores com expertise no tema da pesquisa foram contatados com o intuito de perguntá-los sobre possíveis estudos em andamento. Um e-mail por semana foi enviado por até três semanas consecutivas. Além disso, os artigos que não eram de acesso gratuito via Periódicos Capes (Ministério da Educação, Brasil), foram solicitados pelo perfil do *ResearchGate* (www.researchgate.net) de cada autor e pelo e-mail do autor e/ou coautores. Os artigos também foram solicitados via e-mail à biblioteca da Faculdade de Odontologia da Universidade Federal de Minas Gerais quando constava a presença da revista em arquivo e solicitado também através do Programa de Comutação Bibliográfica – COMUT.

3.3 Estratégia de busca

A estratégia de busca foi elaborada e adaptada para cada base de dados. Foram utilizados os descritores (em inglês *Medical Subject Headings – MeSH)* referentes para cada item da nossa estratégia PEO e seus sinônimos. Além disso, os termos foram colocados para serem recuperados como palavra-chave, quando o caso, e como palavras no título e/ou no resumo dos artigos. Sendo assim, foram elaboradas chaves de busca para crianças e adolescentes, para temperamento e para medo e ansiedade odontológicos, que foram unidas pelo operador booleano *and* para a chave final. A estratégia de busca inicial foi elaborada para ser realizada na base da dados PubMed, e partir dessa foram elaboradas as outras. Para a literatura cinzenta, foi utilizada a chave de busca onde houve maior número de artigos recuperados. As buscas foram feitas sem nenhum filtro para ano de publicação ou idioma do artigo e todas foram realizadas em inglês. Na tabela 1 é possível observar como foram construídas as chaves de busca para cada uma das bases pesquisadas utilizando a sequência da estratégia PEO.

Tabela 1 - Estratégia de busca

BASE	CHAVE DE BUSCA
PUBMED	(child[MeSH Terms] OR child*[Title/Abstract] OR children[MeSH Terms] OR preschool children[MeSH Terms] OR preschool*[Title/Abstract] OR preschool child[MeSH Terms] OR infant[MeSH Terms] OR infant*[Title/Abstract] OR infants[MeSH Terms] OR schoolchild*[Title/Abstract] OR kid[Title/Abstract] OR kids[Title/Abstract] OR pediatric*[Title/Abstract] OR paediatric*[Title/Abstract] OR pedodontics*[Title/Abstract] OR adolescent[MeSH Terms] OR adolescen*[Title/Abstract] OR adolescence[MeSH Terms] OR adolescents[MeSH Terms] OR Teenagers[MeSH Terms] OR Teenager*[Title/Abstract] OR teens[MeSH Terms] OR Teens[Title/Abstract] OR youth[MeSH Terms] OR youth[Title/Abstract]) AND (temperament[MeSH Terms] OR temperament[Title/Abstract] OR personality[MeSH Terms] OR personality[Title/Abstract]) AND (dental fear[MeSH Terms] OR dental fear[Title/Abstract] OR dental anxiety[MeSH Terms] OR dental anxiety[Title/Abstract] OR dental phobia[MeSH Terms] OR dental phobia[Title/Abstract] OR odontophobia[MeSH Terms] OR odontophobia[Title/Abstract])
SCOPUS	TITLE-ABS-KEY (child* or children or "preschool children" or preschool* or "preschool child" or infant* or "schoolchild*" or kid or kids or pediatric* or paediatric* or pedodontics* or adolescen* or adolescence or teenager* or teens or youth) and TITLE-ABS-KEY (temperament or personality) and TITLE-ABS-KEY ("dental fear" or "dental anxiety" or "dental phobia" or odontophobia)
COCHRANE	#1 MeSH descriptor: [Child] #2 MeSH Descriptor: [Child, Preschool] #3 MeSH Descriptor: [Adolescent] #4 MeSH Descriptor: [Infant] #5 children #6 preschool children #7 preschool child #8 schoolchild #9 preschool #10preschoolers #11 childhood #12 kid #13 kids #14 pediatric #15 pediatrics #16 paediatric #17 paediatrics #18 pedodontics #19 adolescence #20 teenagers #21 teens #22 youth #24 MeSH Descriptor: [Temperament] #25 MeSH Descriptor: [Personality] #27 MeSH Descriptor: [Dental Anxiety] #28 dental fear #29 dental phobia #30 odontophobia #23 AND #26 AND #31
WEB OF SCIENCE	TS=child or TS=children or TS="preschool children" or TS="preschool child" or TS=preschool or TS=preschoolers or TS=infant or TS=infants or TS=childhood or TS="school child" or TS=kid or TS=kids or TS=pediatric or TS=pediatrics or TS=paediatric or TS=paediatrics or TS=pedodontic or TS=pedodontics or TS=adolescent or TS=adolescence or TS=adolescents or TS=teens or TS=youth and TS=temperament or TS=personality and TS="dental fear" or TS="dental anxiety" or TS="dental phobia" or TS=odontophobia

EMBASE	(('child'/exp OR 'child' OR child:ti,ab,kw OR children:ti,ab,kw OR 'preschool child'/exp OR 'preschool child' OR 'preschool child':ti,ab,kw OR 'preschool children':ti,ab,kw OR preschool:ti,ab,kw OR 'infant'/exp OR 'infant' OR infant:ti,ab,kw OR infants:ti,ab,kw OR 'school child'/exp OR 'school child' OR 'school child':ti,ab,kw OR kid:ti,ab,kw OR kids:ti,ab,kw OR 'pediatrics'/exp OR 'pediatrics' OR peadiatrics:ti,ab,kw OR pedodontics:ti,ab,kw OR 'adolescent'/exp OR 'adolescent' OR adolescent:ti,ab,kw OR adolescents:ti,ab,kw OR 'adolescence'/exp OR 'adolescence' OR adolescence:ti,ab,kw OR teens:ti,ab,kw OR teenagers:ti,ab,kw OR 'juvenille' OR youth:ti,ab,kw) AND ('temperament'/exp OR 'temperament') OR temperament:ti,ab,kw OR 'personality'/exp OR 'personality' OR personality:ti,ab,kw) AND ('dental anxiety'/exp OR 'dental anxiety') OR 'dental fear':ti,ab,kw OR 'dental phobia'/exp OR 'dental phobia' OR 'dental phobia':ti,ab,kw OR 'dental anxiety':ti,ab,kw OR odontophobia:ti,ab,kw))
LILACS - VHL	((tw:(child)) OR (tw:(children)) OR (tw:("preschool children")) OR (tw:("preschool child")) OR (tw:(preschool)) OR (tw:(preschoolers)) OR (tw:(infant)) OR (tw:(infants)) OR (tw:(childhood)) OR (tw:("school child")) OR (tw:(kid)) OR (tw:(kids)) OR (tw:(pediatric)) OR (tw:(pediatrics)) OR (tw:(paediatric)) OR (tw:(paediatrics)) OR (tw:(pedodontic)) OR (tw:(pedodontics)) OR (tw:(adolecent)) OR (tw:(adolescence)) OR (tw:(adolescents)) OR (tw:(teens)) OR (tw:(youth))) AND ((tw:(temperament)) OR (tw:(personality))) AND ((tw:("dental fear")) OR (tw:("dental anxiety")) OR (tw:("dental phobia")) OR (tw:(odontophobia)))
PsycINFO	((**title**: (dental fear)) *OR* (**abstract**: (dental fear)) *OR* (**title**: (dental anxiety)) *OR* (**abstract**: (dental anxiety)) *OR* (**title**: (dental phobia)) *OR* (**abstract**: (dental phobia)) *OR* (**title**: (odontophobia)) *OR* (**abstract**: (odontophobia))) *AND* ((**title**: (temperament)) *OR* (**abstract**: (temperament)) *OR* (**title**: (personality)) *OR* (**abstract**: (personality))) *AND* ((**title**: (child)) *OR* (**abstract**: (child)) *OR* (**title**: (children)) *OR* (**abstract**: (children)) *OR* (**title**: (preschool)) *OR* (**abstract**: (preschool)) *OR* (**title**: (adolescent)) *OR* (**abstract**: (adolescent)) *OR* (**title**: (kid)) *OR* (**abstract**: (kid)) *OR* (**title**: (infant)) *OR* (**abstract**: (infant)) *OR* (**title**: (teenagers)) *OR* (**abstract**: (teenagers)) *OR* (**title**: (teens)) *OR* (**abstract**: (teens)) *OR* (**title**: (youth)) *OR* (**abstract**: (youth)))
OPEN GREY	child and personality and dental anxiety
GOOGLE SCHOOLAR	child and personality and dental anxiety

Fonte: Elaborado pela autora, 2021.

3.4 Seleção dos artigos

Duas revisoras independentes conduziram as buscas (ACFP e DRC). As referências recuperadas nas pesquisas nas bases de dados foram adicionadas ao *EndNote Web (EndNote X7®, Clarivate Analytics,* Toronto, Canadá*)* para uma primeira remoção de duplicata de forma automática. Uma remoção manual de duplicatas foi realizada de forma a conferir se restaram artigos duplicados após a remoção automática. Depois disso, os artigos foram adicionados ao aplicativo *Rayyan QCRI* (*Rayyan, Qatar Computing Research Institute*) (OUZANI *et al.*, 2016) e duas pesquisadoras independentes (ACFP e DRC) foram responsáveis pela leitura de título e resumo, selecionando os artigos para leitura completa. Esse processo foi feito de forma independente por duas pesquisadoras. Artigos que não possuíam resumo disponível foram selecionados para leitura completa, assim como artigos que deixaram dúvidas sobre sua elegibilidade após leitura de título e resumo. No caso de artigos em outros idiomas, foi utilizada a ferramenta do Google Tradutor para que pudesse acessar o artigo na íntegra e verificar a sua elegibilidade. As discordâncias que surgiram durante o processo de identificação, triagem, avaliação para elegibilidade, inclusão e exclusão de estudos e extração de dados foram discutidas e resolvidas com um terceiro revisor (CBB). A leitura completa dos artigos foi realizada pelas mesmas duas pesquisadoras independentes (ACFP e DRC).

3.5 Processo de coleta de dados

A extração dos dados dos artigos incluídos na revisão sistemática foi realizada pelas mesmas duas pesquisadoras que fizeram as etapas anteriores (ACFP e DRC), de forma independente. Foi elaborada uma planilha no *Microsoft Excel®* (*Microsoft Corporation*, Washington, USA), na qual os dados relativos às características dos estudos, como local, ano, desenho de estudo, local de realização da coleta de dados, características dos participantes, métodos de avaliação para as variáveis exposição e desfecho, resultados e conclusão de cada estudo foram extraídos. Para esse processo também houve participação de uma terceira pesquisadora (CBB) para solucionar as dúvidas e discordâncias. Foi enviado e-mail

para os autores quando os dados nos artigos eram inconsistentes ou faltava alguma informação considerada importante para a extração dos dados. Os e-mails foram enviados por até três vezes em três semanas consecutivas.

3.6 Dados extraídos

O desfecho de interesse dessa revisão sistemática é medo e ansiedade odontológicos. O medo e a ansiedade odontológicos foram coletados como variável dicotômica ou contínua a depender de cada estudo. Para valores dicotômicos, foi registrado o valor absoluto de indivíduos que eram ansiosos (ou com medo) e indivíduos não ansiosos (ou sem medo) de acordo com o ponto de corte de cada instrumento. Para variável contínua, foram coletados média e desvio padrão dos escores de ansiedade/medo. O tipo de método de avaliação utilizado para mensurar medo e ansiedade odontológicos nos estudos foram extraídos de cada artigo.

Para temperamento foram coletados média e desvio padrão para a amostra total e para grupos ansiosos (ou com medo) e não ansiosos (ou sem medo), quando disponível. Foram extraídos também os métodos de avaliação da exposição utilizados em cada estudo.

Quando ambas as variáveis eram contínuas, foram coletados valores de correlação entre temperamento e medo e ansiedade odontológicos. Quando temperamento era contínuo e medo e ansiedade odontológicos dicotômico, o valor do teste *t* para diferença de médias foi extraído para avaliar associação entre temperamento e medo e ansiedade odontológicos.

Em caso de dúvidas quanto a clareza dos dados ou na falta de alguma informação, foi feito contato com os autores do artigo em busca dos dados necessários, seguindo a mesma metodologia citada anteriormente.

3.7 Avaliação de risco de viés

Para avaliar o risco de viés de cada estudo incluído nesta revisão sistemática, foi utilizada a Diretriz de Avaliação Crítica de Fowkes e Fulton (FOWKES

e FULTON, 1991). As duas revisoras responsáveis pelas outras etapas (ACFP e DRC), também realizaram essa etapa de forma independente. A escolha para esse instrumento foi o fato de o presente estudo envolver estudos primários com delineamentos transversais e caso-controle, e o guia de Fowkes e Fulton permite avaliar a qualidade dos dois desenhos de estudo com apenas um instrumento de análise (FOWKES e FULTON, 1991). Outra razão para a escolha desse instrumento se deu pela sua utilização em recentes revisões sistemáticas da área da odontologia que envolveram estudos observacionais (SCALIONI *et al.,* 2018; SILVEIRA *et al.,* 2020).

A avaliação da qualidade dos artigos é feita baseada em importantes aspectos da condução de um estudo. Cada item é avaliado da seguinte maneira: "0 – Nenhum problema"; "++ - Problema maior"; "+ - Problema menor"; "NA – Não aplicável", como mostra a figura 1.

Para cada item foram estipuladas condições que se encaixariam em cada avaliação. No critério de seleção e representatividade da amostra, a ausência de cálculo amostral e de método randomizado de seleção foram considerados problemas maiores. A ausência da definição dos critérios de inclusão e exclusão também foram considerados problemas maiores. A definição de apenas um dos critérios foi considerado problema menor. As perdas maiores que 20% foram consideradas problemas maiores, mas quando essas perdas não apresentavam diferença nas características entre os respondentes, se encaixam em problemas menores.

A validação dos instrumentos era fundamental, e caso isso não tivesse sido apresentado pelo estudo, se enquadraria como problema maior. Assim como processo de calibração dos examinadores e teste de qualidade aplicados ao estudo, como de consistência interna, quando não realizado, foi considerado problema maior.

O relato seletivo foi considerado um problema maior, assim como a ausência de planejamento dos estudos levando em consideração fatores de confusão e a ausência de ajuste na análise estatística para esses fatores.

No caso da avaliação de fatores de confundimento, se estabeleceu que sexo, idade e experiências odontológicas prévias deveriam ser considerados. Em caso de não serem considerados ou se a análise estatística não fosse ajustada por eles, seria considerado problema maior.

Para os estudos de caso-controle, a definição das características comparáveis entre os grupos, a seleção dos grupos por métodos qualificados e similares e o pareamento foram considerado fundamentais para elevar a qualidade metodológica do estudo. Caso o local de seleção das amostras não fosse similar, não permitindo que os itens acima fossem aplicados, foi considerado um problema maior.

Alguns dos itens de avaliação não se aplicam a estudos transversais e de caso-controle. Entre eles estão quão completos os dados estão em relação ao número inicial de participantes incluídos, possíveis mortes e desistência com o tempo, influência ou contaminação de tratamentos externos ou mudanças pelo tempo.

Após a análise detalhada, três perguntas finais são respondidas de forma a sumarizar a análise da qualidade metodológica dos estudos incluídos. A avaliação é feita de forma a verificar se "os resultados estão enviesados em alguma direção", se "existem confundidores ou outras influências sérias" e se "os resultados podem ter ocorrido ao acaso". Essas perguntas são respondidas com "SIM" ou "NÃO". Se todas as três perguntas forem respondidas com "NÃO" o estudo não apresenta problemas metodológicos. Caso pelo menos uma pergunta seja respondida com "SIM", o estudo é classificado como tendo problemas metodológicos. Os critérios utilizados em cada item estão detalhados na tabela suplementar 1 (ST1). Em caso de dúvidas quanto a clareza dos dados ou na falta de algum dado considerado importante, foi feito contato com o autor via e-mail solicitando tais dados, sendo enviado um e-mail semanalmente, por até três semanas. A análise de qualidade dos artigos foi realizada de forma independente por duas revisoras (ACFP e DRC) e uma reunião para solucionar possível discordâncias foi realizada para se fazer o julgamento final de qualidade.

Figura 1 - Diretriz para avaliação crítica de artigos por Fowkes e Fulton.

Risk of Bias Assessment		
1 – Study design appropriate to objectives?		
2 – Study sample representative	Source of Sample	
	Sampling Method	
	Sample Size	
	Entry criteria/exclusion	
	Non respondents	
3 – Control group acceptable	Definition of controls	
	Source of controls	
	Matching/randomization of controls	
	Comparable characteristics	
4 – Quality of measurements and outcomes	Validity	
	Reproducibility	
	Blindness	
	Quality control	
5 – Completeness	Compliance	
	Drops outs/death	
	Missing data	
6 – Distorting influences	Extraneous treatment	
	Contamination	
	Changes over time	
	Confounding factors	
	Distortion reduces by analysis	
++ = Major problem + = Minor problem 0 = No problem NA = Not applicable		
1 – Bias - Are the results erroneously biased in a certain direction?		( ) YES ( ) NO
2 – Confounding - Are there any serious confounding or other distorting influences?		( ) YES ( ) NO
3 – Chance - Is it likely that the results occurred by chance?		( ) YES ( ) NO

Fonte: Elaborado pela autora, 2021.

3.8 Método de síntese

A heterogeneidade metodológica entre os estudos, em relação ao número de dimensões de temperamento, não permitiu que os dados fossem agrupados para a realização da meta-análise. Devido às limitações encontradas, a síntese qualitativa foi escolhida para discutir os possíveis agrupamentos baseados nas dimensões de temperamento, nos diferentes questionários de temperamento, na idade dos participantes e nos locais de seleção da amostra.

Figura 2 - Síntese por subgrupo baseada na idade, local de seleção, questionários de temperamento e dimensões de temperamento.
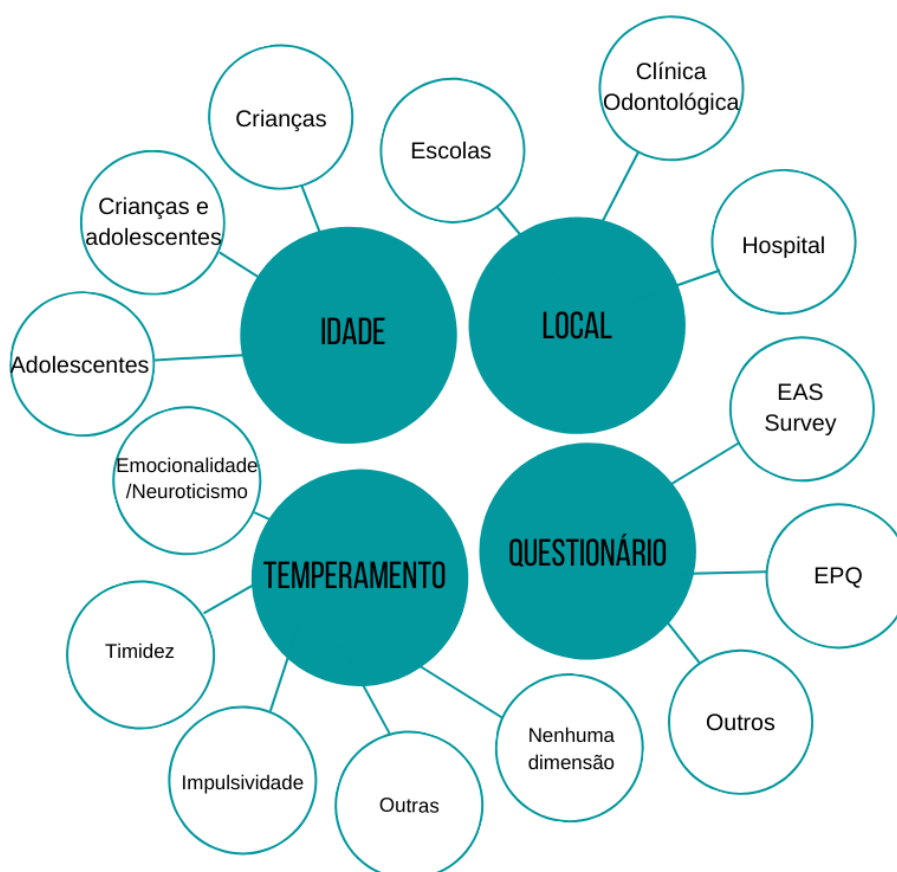
Fonte: Elaborado pela autora, 2021.

3.9 Certeza da evidência

Para avaliação de certeza de evidência, a ferramenta *GRADE (Grading of Recommendations Assessment, Development and Evaluation) (*RYAN e HILLS, 2016) foi utilizada. Estudos observacionais iniciam sua classificação com baixa certeza de evidência. Quando há sérios problemas relacionados ao risco de viés, inconsistência, evidência indireta, imprecisão e viés de publicação, a certeza da evidência cai um ou dois pontos, podendo ser classificada como muito baixa. De maneira contrária, quando existe uma grande magnitude do efeito, os fatores de confundimento são minimizados, existe um efeito espúrio ou uma relação dose-resposta, a certeza da evidência pode ser elevada em um ou dois pontos. Dessa forma, a certeza da evidência pelo método GRADE pode variar de alta a muito baixa.

Para o critério 'risco de viés', foi considerado um problema sério se algum estudo apresentasse problemas metodológicos e muito sério caso dois ou mais estudos apresentassem. Se não houvesse problemas metodológicos, seria classificado como não sério. Para 'inconsistência', foi considerado um problema sério se os estudos incluídos apresentassem grande variação de efeito entre eles, mostrando resultados divergentes.

Para a evidência indireta, foi considerada a população de interesse para o estudo e sua validade externa. Se o estudo incluísse apenas um grupo etário, crianças ou adolescentes, seria considerado problema sério. Imprecisão foi considerada um problema sério seguindo o critério de número de participantes menor do que 400 para o total avaliado.

Viés de publicação foi considerado não detectado nesse estudo, já que a busca foi realizada em diversas bases de dados e na literatura cinzenta sem limitações quando a idioma e data de publicação, e todos os estudos considerados elegíveis foram analisados por completo. A magnitude do efeito foi avaliada de acordo com Ryan e Hills (2016) para médias e de acordo com Hulley *et al.*, (2003) para dados de correlação. O critério dose resposta não se aplica aos estudos incluídos nessa revisão sistemática e foi classificado de forma que não altere a classificação final da evidência.

A avaliação de certeza da evidência foi realizada por três revisoras (ACFP, DRC, MBM) de acordo com a análise estatística utilizada para comparar temperamento com medo e ansiedade odontológicos.

4 RESULTADOS E DISCUSSÃO

ARTIGO

Temperament traits: are they associated to dental fear and anxiety? A systematic review

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ABSTRACT

This systematic review aims to verify the association/correlation of temperament traits with dental fear and anxiety (DFA) in children and adolescents (PROSPERO #CRD42020207578). the PEO strategy: children and adolescents (P-population), temperament (E-exposure), and DFA (O-outcome). Observational studies without restrictions on year or language of publication were included. A systematic search was performed, by two independent researchers, in seven databases and grey literature, up to April/2021. The following data of the included articles were extracted and synthesized: location, year, study design, place of data collection, characteristics of the participants, methods for exposure and outcome variables, results, and conclusion. The risk of bias assessment was performed by the Fowkes and Fulton criteria and the certainty of the evidence by the GRADE method. 1362 articles were recovered and 11 were included. Qualitative synthesis by subgroups showed positive association/correlation between temperament of emotionality/neuroticism and shyness with DFA in children and adolescents. Eight studies had low methodological quality. In conclusion, children and adolescents with temperament like emotionality/neuroticism and shyness are more likely to present higher DFA. This result should be evaluated with caution due to the high heterogeneity and low methodological quality of the studies, with very low certainty of evidence.

Keywords: Dental fear. Dental anxiety. Child. Adolescent. Temperament. Personality. Behavioral science.

1 BACKGROUND

Fear and anxiety are normal reactions in answer to some potential or real threat and they promote biological body changes that are important to survival[1]. Fear results from a concrete situation, and anxiety is related to the anticipation of a possible threat[2]. In dental environment, fear can be characterized as an emotional reaction to specific stimuli, like as drilling sound or the smell of a dental material, and it is called dental fear (DF). Dental anxiety (DA) is a state of apprehension resulting from anticipation of some thoughts about the dental appointment. The related reactions are different, fear is more associated with excitability for fight or flight, and anxiety is more an apprehension state looking for a future situation, but sometimes they may overlap[2].However, it is hard to differentiate fear and anxiety in dentistry, thus the term "dental fear and anxiety" (DFA) is used to refer to strong negative feelings associated with dental treatment or environmental[3,4]. A systematic review demonstrated a pooled prevalence of DFA of 23.9% in children and adolescents between 3 and 18 years old[5].

DFA are common in child development and can occur by endogenous or exogenous factors[6]. The exogenous factors related to higher DFA involve dental pain and negative dental experience[7,8], as well as parents that also have DFA[9]. Endogenous factors for DFA are related to individuals' characteristics, such as age, sex, general anxiety, depression and temperament or personality traits[2,10,11].

Temperaments or personality traits are two synonyms' terms to define individuals' differences in emotional responses to the environment[12,13]. These characteristics are present in early infancy and are relatively stable throughout life. Temperament are an early stage of personality development[12,13]. Therefore, there are different theories about the temperament that result in some dimensions and measures[12,14,15.] In dentistry, the most used theories of temperament were proposed by Buss and Plomin[13] and Eysenck[14,15], including emotionality, activity, shyness, sociability, impulsivity, neuroticism, extroversion, and non-sincerity dimensions.

During dental care, child is under the influence of various and often unknown stimuli, which can be recognized by them as threats. The way how children react emotionally in different situations can be an indication of how they would react in situations such as dental care. The literature demonstrates a possible association between temperament like emotionality/neuroticism and DFA[16,17,18]. In other way, there are studies that has not demonstrated such association[19,20]. However, to date, no systematic review of the literature on this topic has been conducted to provide a synthesis of the primary studies, which would support a greater basis on the relationship between temperament and DFA of children and adolescents. The results of the present study may support pediatric dentists in their daily practice, and also may be a way to guide new research on the topic, in order to answer how the temperament could be related to DFA in children and adolescents. Therefore, the present study aims to review the available literature on this topic in a systematic way, qualify and synthesize its results about the role of the child/adolescent's temperament in DFA.

2 METHODS

This systematic review was registered in PROSPERO platform (#CRD42020207578). The present study conforms to the guidelines of the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA 2020)[21].

2.1 Eligibility criteria

The inclusion criteria for this systematic review were published observational studies (cross-sectional, case-control and cohort), without restrictions on language or date of publication. To be included, the studies needed to fit the determinations of the following PEO strategy. This strategy was used because the primary studies did not have a comparator, since association or correlation was performed between the exposure and the outcome[22]:

- Population: Children and/or adolescents;

- Exposure: Temperament;

- Outcome: Dental fear and anxiety (DFA)

The exclusion criteria were case reports, literature reviews, studies that evaluate the association between DFA and temperament in disabled child and adolescents or studies that used behavior management problem as temperament.

2.2 Information sources

Searches were performed in the following databases: PubMed (National Library of Medicine), Web of Science (Clarivate Analytics), Scopus (Elsevier), Lilacs (VHL), Embase (Elsevier), Cochrane and PsycINFO (APA). The grey literature was searched through Google Scholar and OpenGrey. In the Google Scholar, the first 200 references were screened. The list of references of studies included in the systematic review was also verified in search of possible articles to be included. The searches were conducted up to April 2021.

Some authors with expertise in the research theme were contacted to ask them about ongoing studies. One email per week was sent for up to three consecutive weeks.

2.3 Search strategy

The search strategy was elaborated and adapted for each database. The descriptors (*MeSH / Emtree*) were used for each PEO question criterion and its synonyms. The terms were placed to be retrieved as Mesh/Emtree and/or as free words in the title, abstract or keywords of the articles. The searches were made without any filter for the publication or language and performed with the terms in English. Table 1 demonstrates how each search strategy was constructed for each database using the PEO strategy sequence.

2.4 Selection Process

Two independent reviewers conducted the searchers (ACFP and DRC).

The references were added to *EndNote* Web (*EndNote X7®, Clarivate Analytics, Toronto Canada*) for an automatic first duplicate removal. A manual removal of duplicates was performed to verify duplicate items remained after automatic removal. After that, the articles were added to *Rayyan QCRI* application (Rayyan, Qatar Computing Research Institute)[23] and the same two independent reviewers (ACFP and DRC) read titles and abstracts. Based on the eligibility criteria, articles were selected for full reading. Articles that did not have an abstract available were selected for full reading. Articles that were not clear for eligibility by reading title and abstract were included for full reading. The Google Translator was used to translate articles in languages different from English. The disagreements that arose during the process of identification, screening, evaluation for eligibility, exclusion and inclusion of studies was resolved by a third reviewer (CBB).

2.5 Data collection process

The data extraction from the articles included was performed independently by two reviewers (ACFP and DRC). Data related to characteristics of the studies, such as location, year of publication, study design, setting of study, characteristics of the participants, evaluation methods for the exposure and outcome variables, results and conclusion of each study were extracted and registered in the Microsoft Excel® (Microsoft Corporation, Washington, USA). Any doubts and disagreements were solved for a third researcher (CBB). E-mails were sent to authors, up to three times in three consecutive weeks, when article's data were inconsistent or there was a lack of any important information.

2.6 Study methodological quality and risk of bias assessment and reporting

To assess the methodological quality of each study included in this systematic review, the Fowkes and Fulton Critical Assessment Guideline[24] was used. The Fowkes and Fulton guideline allows evaluating the quality of cross-sectional and case-control studies with only one instrument[24].

The evaluation of the methodological quality of the articles is based on important aspects of studies: appropriate study design for the purpose, representativeness of the study sample, characteristics of the control group, use of reliable methods to evaluate outcome and exposure, how complete are the data in relation to the sample proposed and how are the data influenced by externals factors like confounding factor or treatments. Each aspect of the Fowkes and Fulton guide is rated as "0 - No problem", "++ - Major problem", "+ - Minor problem" and "NA - Not applicable". After a detailed appraisal of the methods and results, three final questions were made to summarize the methodological quality. Based on that, there is an evaluation of "results erroneously biased in a certain direction", "serious confounding or other distorting influences" and "results occurred by chance". Such factors can

decrease the quality of the included article. These questions were answered with "Yes" or "No". If the answer for all the three questions was "No," then the study was considered free of problems, and if there is any 'Yes', the study has methodological problems. The criteria in each question are presented in supplementary table 1 (ST1).

This phase was performed by two reviewers (ACFP and DRC) and a meeting to solve any disagreements was made to final judgment. In case of doubts regarding the clarity of the data or in the absence of any information, contact was made with the authors asking for additional data. The e-mails were sent up to three times in three consecutive weeks.

2.7 Effect measures

The outcome of interest in this systematic review is DFA. DFA was presented as dichotomous or continuous variable depending on each study. For dichotomous variables, absolute value of individuals who were anxious or non-anxious according to the cutoff point of each instrument used in each study were recorded. For continuous variable, mean and standard deviation of anxiety scores were collected.

For exposure and comparison groups, the mean values and the standard deviation of the temperament dimensions scores were collected for the total sample and for anxious and non-anxious groups (when available).

When both variables were continuous, correlation values between temperament and DFA were collected. When temperament was continuous and DFA was dichotomous, the *t*-test results were collected for association between means of temperament and DFA groups.

If there was any unclear information, contact with the authors was made to obtain such information. The e-mails were sent up to three times in three consecutive weeks.

2.8 Synthesis of results

The data synthesis was performed considering the possibilities of grouping between the studies taking into account the homogeneous data among studies. The methodological heterogeneity of the studies in relation to the dimensions used for each theory did not allow the data to be grouped to perform a meta-analysis. Thus, the qualitative synthesis was chosen to discuss possible groupings based on each dimension of temperament, temperament questionnaires, age of the participants and local of source (Figure 1).

2.10 Certainty Evidence

The GRADE approach (Grading of Recommendations Assessment, Development and Evaluation)[25] was performed to determine the certainty of evidence of relationship between temperament and DFA by three reviewers (ACFP, DRC and MBM) according to statistical analysis.

Observational studies started with low certainty of evidence and when serious or very serious issues related to risk of bias, inconsistency, indirectness, imprecision, and publication bias are observed, the certainty of evidence decrease one or two points and could be classified as very low. Age of participants (children and adolescents) was considered for indirectness. Conversely, if there is large or very large magnitude of an effect, plausible confounding factors are minimized or suggest a spurious effect, the certainty of evidence increase one or two points. Magnitude of effect was classified according to correlation force (weak ɼ<0.4, moderate ɼ>0.4 and <0.5, strong ɼ>0.5 and <0.9, and very strong ɼ>0.9) and significance[26], while in confounding factors it was evaluated if studies results were adjusted to age, gender, and pain history. Dose-response was not applied and was classified in a way to not influenced in final judgment. The GRADE evidence can range from very low to high[24].

The certainty of evidence was determined considering the statistical analysis performed in primary studies (association and correlation).

3 RESULTS

3.1 Study selection

A total of 1362 studies were recovered from seven databases and grey literature and 259 were removed because they were duplicated. After the title and abstract reading, 1034 articles were excluded because they did not meet the inclusion criteria. Sixty-nine articles were included for full text reading, of which 11 were included in this systematic review. These data are found in the flowchart (Figure 2). It was not possible to get access to one of the articles retrieved in searches because the reference does not exist at the journal volume indicated and the contact with the author was not possible. The articles that were excluded after full reading are described at the supplementary table 2 (ST2).

3.2 Study Characteristics

The 11 included studies were published between 1974 and 2019[16-20,27-32]. Most studies included children under 12 years old and none of them included adolescents over 16 years old. These studies were conducted in nine different countries distributed in three different continents. Nine studies had cross-sectional[16-20,27-30] and two were case-control designs[31,32].

To evaluate the temperament, there are five studies that used different versions of EAS instrument[16,17,18,20,32], two studies used EPQ[19,30], and one study elaborated its own instrument using the Buss and Plomin approach[29]. The other three studies used different validated instruments to evaluate the dimensions of temperament in different way[27,28,31]. Another Canadian study used a thirteen-temperament dimension instrument developed to preschool children[28]. The North American study used an instrument that measures temperament dimensions based on daily activities (VEHNAM 1979)[27]. A Welsh study used a two temperament dimensions scale, measuring neurotic and sociability tendencies[31].

To access DFA, the 11 included studies used 12 different methods. Only two studies used the same scale, the Children Fear Survey Scale – Dental Subscale (CFSS-DS)[29,32], but one of them used additionally other two methods[32]. Seven of the 12 methods were specifics to DFA[17,18,20,27,28,29,32], the others are general anxiety instruments that were applied in the dental environment to access DFA[16,19,30,31].

When these results were grouped, we observed that emotionality or neuroticism appeared correlated or associated with DFA in six studies [16,17,18,30,31,32] and shyness appeared correlated or associated to DFA in three studies[16,18,32] one of the studies found that impulsivity was correlated to DFA [17]. One study found DFA correlated to passive withdrawal, aggressiveness and pessimism[27]. Four studies have not found any correlation or association between temperament and DFA[19,20,28,29].

The characteristics regarding year and country of publication, study design, number of participants, sample location selection, measurements of the outcome and exposure, and results of the 11 studies included in this review are presented in Table 2.

3.3 Risk of Bias in studies

The two independent reviewers performed the risk of bias assessment using Fowkes and Fulton guideline[24]. Only three studies were classified with no methodological problem regarding the answers for the three final questions[17,18,20], the other eight studies presented high risk of bias [16,19,27-32]. Items with major problem in almost all studies was the sample size, that was not[16,17,19,20,27-30,32] and the absence of a quality control of the study[16,19,20,27-32]. Four studies had problems with using non-validated instruments or has not explained about that validity of the instrument[16,27,29,32]. One of the case-control studies has not mentioned about matching or randomization and comparable characteristics between cases and controls, being classified with (++) for these criteria[32].

The studies included in this systematic review were cross-sectional and case-control, so, items like compliance, dropouts, deaths, extraneous treatments, contamination and changes over time were not applied, being classified with (NA). The results of each item appraisal and the final judgment of each study based on the three final questions are also present in Table 3.

3.4 Narrative synthesis of subgroups

3.4.1 Dimensions subgroup of temperament

We have different instruments, but we can associate the dimensions of each one based on the authors explanation. In six studies, the emotionality temperament or neuroticism tendencies were correlated/associated to DFA[16,17,18,30,31,32]. Three of them presented shyness correlated to DFA [16,18,32] and one presented impulsivity correlated to DFA[17]. One study has other temperaments like passive withdrawal, pessimism and aggressiveness dimensions related to DFA. The temperament of passive withdrawal has a behavior similar to shyness[27]. And four studies have not found any association between the temperament and[19,20,28,29] (Figure 3).

3.4.2 Instrument groups of temperament

The temperaments theories were different between the included studies in this systematic review. Six studies used EAS instrument by Boss and Plomin, in four different ways[16,17,18,20,29,32]. Three studies used the EAS instrument evaluating four temperament dimensions: emotionality, activity, shyness and sociability[16,20,32]. One study has used the EAS instrument with five dimensions including emotionality, activity, shyness, sociability and impulsivity[17]. Other one used the EAS instrument with three dimensions: emotionality, activity and shyness[18]. And the last one used a non-validated instrument using five temperament dimensions by Buss and Plomin: emotionality, activity, shyness, sociability, impulsivity and added the emotional lability dimension[29]. When these results were grouped, we observed that emotionality appeared correlated with DFA in four studies[16,17,18,32] and shyness appeared correlated to DFA in three studies[16,18,32]. One of the studies found that impulsivity was correlated to DFA[17]. The others two studies have not found any correlation or association between temperament and DFA[20,29].

Using the EPQ instrument, two studies evaluated de correlation between temperament and DFA. One of them found that neuroticism was correlated to DFA[30] and the other found no correlation[19].

The other three studies used each one a different theory for temperament[27,28,31]. Neuroticism were correlated in one study[31]. Other study found that passive withdrawal, a characteristic similar to shy people, aggressiveness and pessimism were correlated to DFA[27]. The other one has not found any correlation[28]. Those groups are represented at Figure 4.

3.5.3 Age subgroup

In all age groups, an association between emotionality/neuroticism and DFA was found[16,17,18,30,31,32] (Figure 5). In some age groups, there was found other temperament beyond emotionality associated with DFA[16,17,18,32].

3.5.4 Local of source subgroup

It was possible to group the studies into three locals of source: dental clinics[18,19,27,29,32] hospitals [16,20,30,31] and schools [17,28]. At all the three locals of source, at least one study has found an association between emotionality/neuroticism and DFA. Only the school studies have involved only adolescents as population[17,28] the others have children and adolescents as population of study[18-20,27,29-32] (Figure 6).

3.6 Certainty of Evidence

The certainty of evidence results was described in Table 3. There were eight different instruments, two of them had been used in more than one study. In this analysis the certainty of the evidence was very low. Indirectness and imprecision were the items with more problems in these studies. The case-controls studies have not more than 400 patients and most of the studies has not included both children and adolescents as population. The certainty of the evidence was very low in both groups

according to statistical analysis. The risk of bias in the included studies was a common problem in certainty of evidence analysis.

DISCUSSION

Fear is a reaction related to distress. Children with higher levels on emotionality have difficult on cope with their emotional reactions in distress situations[12]. It supports the findings of this systematic review, that found a positive correlation between emotionality and DFA[16,17,18,30,31,32]. Children who present higher emotionality tend to be more dependent from their parents/caregivers, so they demonstrate shy tendencies[12]. It supports the correlation between shyness and DFA in younger children found in the included studies, and the avoidance of new situations, called passive withdrawal[16,18,27,32].

It is important to the dental practice be more humanity as possible and promote positive experiences to the patients, avoiding the vicious cycle of DFA[33]. The possible correlation between emotionality and shyness with DFA found in our study supports the use of temperaments to identify children and adolescents in risk to present DFA. Thus, the dentist could be prepared to use the more adequate intervention strategy in pediatric dentistry practice. A support of psychology to understand more about the temperament dimensions, how to use them as a dental research tool and the interpretation of the results could improve our practice. It is important to consider a consistent approach of temperaments/personality traits. The use of standardized and validated instruments in further studies would improve the comparisons between them and allow future systematic review to summarize results and produce quantitative analysis.

There is a high variability in the instruments used for measuring DFA between the studies. Twelve different instruments were applied. Seven of them[17,18,27,28,29,32] are specific to dental situations. The other instruments measure general anxiety, but were applied in the context of dentistry[16,19,30,31]. Despite of most studies used valid and reliable instruments to measure DFA and temperament, these variability in instruments and cut-off points increase heterogeneity between studies and make impossible aggregate results in a meta-analysis[5].

Another issue is how the DFA instruments and temperament instruments are applied. In the literature, we can find differences in the answers between children self-reports and their parents/caregivers proxy report regarding DFA and temperament[5,34]. Some parents/caregivers may be more flexible than others in the way how they see their children about their emotional reactions[12]. Furthermore, a systematic review published in 2020 demonstrated three times higher prevalence of DFA from children self-reported than those answered by the parents/caregivers[5]. To young children, DFA instruments use face scales to help children to interpret and give an appropriate answer by themselves[35]. To best of our knowledge, there is no self-

report instrument that measure temperament in young child that were applied to dentistry.

There are many controversies in the literature about the definition and dimensions of temperament or personality traits, resulting in different studies without consensus among them[12,13]. Five different theories to assess temperament were observed in the included studies. Their theoretical differences are related to the number and concept of temperaments[12,14,15,27,28,31]. However, the different theories agree that characteristics of the individual development of each one and appear still in infancy, being relatively stable throughout life[13]. These differences observed in this systematic review made impossible the data from different studies being unified. Even with these differences observed between the instruments, we could find a tendency on the correlation between some types of temperament and DFA. With these findings, we can suggest that the use of similar theories with less discrepancy between definitions could make possible a quantitative analysis in future studies.

In synthesis for age subgroup, we could observe that at least one studies found a correlation between emotionality or neuroticism and DFA in each age group, showing consistency in both children and adolescents. The world health organization defines adolescence as individuals between ten and nineteen years old[36]. The majority of the included studies have not divided the analysis by age group, so in our analysis, the group of children and adolescents were overlapped in many studies, only two studies were exclusive with adolescents and three studies with children.

Only two studies were performed at a neutral environment, such as schools[17,28]. In dental clinic and hospitals, the presence of DFA may be associated with possible exposure to stimuli[34]. More studies in schools may make it possible to assess the correlation between temperament and trait of anxiety. Trait of anxiety is a more stable characteristic that do not need for a specific stimulus[34]. In contrast, state of anxiety measures how the children or adolescent is feeling at the moment, being employed at dental context[34].

The main findings of this systematic review are that some temperament like emotionality and shyness are related to DFA. However, the high heterogeneity between studies as well as their methodological limitations and the very low certainty of evidence do not allow a definitive conclusion about this issue.

The presence of DFA in children and adolescents may be associated to dental behavior management problems (DBMP) [33,37]. Furthermore, studies also found that temperament are related to behavior problems in dentistry [16,18]. In despite of DFA and DBMP are related, they are not a predict form of each other. Not at all the children and adolescent who have DFA are patients with DBMP and these two terms cannot be used like synonymous[33,37]. So, the present study was performed based only in DFA and its relation with temperament, considering that the definition that DFA and DBMP are different.

Therefore, the authors of this systematic review reinforce the need of new studies with representative samples of children and adolescents from different cultures, using standard instruments for DFA and consistent theories for temperament. Also, the use of a checklist for observational studies like the STROBE (The Strengthening the Reporting of Observational Studies in Epidemiology)[38] would

increase the quality of the studies reports by guiding authors how to write their studies in a clearer and more standardize way. This standardization on the report between studies could facilitate the data synthesis and interpretation. Also, it can help on the analysis of strengths and weakness of studies in a future review[38].

CONCLUSION

Our conclusions showed that some temperament like emotionality and shyness are more related to DFA. Our goal as pediatric dentists is to promote the best experience to our patient and consequently avoid the vicious cycle of DFA. These results can be useful in order to prepare the most adequate strategy to deal with the fearful patient. Having a multidisciplinary approach may help children and adolescents to cope with their DFA and have a good relationship with their oral health care. The methodological limitations and the very low certainty of evidence suggest the importance of future studies using consistent instruments and standardized methodological approach.

REFERENCES

1. Öhman A. Fear and Anxiety: Overlaps and dissociation. In: Lewis M.; Haviland-Jones JM.; Barret LF(Eds). Handbook of Emotions**.** New York: The Guilford Press; 2008. Chap 44, p. 709-729.

2. AMERICAN PSYCHIATRIC ASSOCIATION (APA). Diagnostic and Statistical Manual of Mental Disorders, 5th Edition: American Psychiatric Association, Washington, DC, 2014.

3. Klingberg G, Broberg AG. Dental fear/anxiety and dental behaviour management problems in children and adolescents: a review of prevalence and concomitant psychological factors. **Int J Paediatr Dent**, 2007;17(6):391- 406.

4. Cianetti S, Lombardo G, Lupatelli E, Pagano S, Abraha I, Montedori A, *et al*. Dental fear/anxiety among children and adolescents. A systematic review. **Eur J Paediatr Dent**, 2017;18(2):121-130.

5. Grisolia BM, Santos APP, Dhyppolito IM, Buchanan H, Hill K, Oliveira BH. Prevalence of dental anxiety in children and adolescents globally: A systematic review and meta-analyses. **Int J Paediatr Dent**, 2020;31(2):168-183.

6. Morgan AG, Porrit J. Background and prevalence on dental fear and anxiety. In: CAMPBELL, C. Dental fear and anxiety in pediatric patients. Cham: Springer; 2017. Chap 1, p, 3-19.

7. Ramos-Jorge J, Marques LS, Homem MA, Paiva SM, Ferreira MC, Ferreira FO, Ramos-Jorge ML. Degree of dental anxiety in children with and without toothache: prospective assessment. **Int J Paediatr Dent**, 2013;23(2):125-130.

8. Colares V, Franca C, Ferreira A, Amorim Filho HA, Oliveira MCA. Dental anxiety and dental pain in 5- to 12-yearold children in Recife, Brazil. **Eur Arch Paediatr Dent**, 2013;14(1):15-19.

9. Busato P, Garbin RR, Santos CN, Paranhos LR, Rigo L. Influence of maternal anxiety on child anxiety during dental care: cross-sectional study. **São Paulo Med J**, 2017;135(2):116-122.

10. Stenebrand A, Boman UW, Hakeberg M. Dental anxiety and symptoms of general anxiety and depression in 15-year-olds. **Int J Dent Hyg**, 2013;11(2):99-104.

11. Abanto J, Vidigal EA, Carvalho TS, Sá SNC. Bönecker M. Factors determining dental anxiety in preschool children with severe dental caries. **Braz Oral Res**, 2017;31:e13.

12. Buss AH, Plomin R. Temperament: **Early Developing Personality Traits**. Nova Jersey: Lawrence Erlbaum Associates; 1984. 193p.

13. Pereira PC, Guzzo RSL. Individual Differences: temperament and personality; importance of the theory. **Rev Estudos de Psicologia,** 2002;19(1):91-100.

14. Eysenck HJ, Eysenck SBG. Manual of the Eysenck Personality Inventory. Kent: Hodder and Stoughton; 1964. 26p.

15. Eysenck HJ. The definition and measurement of psychoticism. **Person Individ Diff**, 1992;13(7):757-785.

16. Quinonez R, Santos RG, Boyar R, Cross H. Temperament and trait anxiety as predictors of child behavior prior to general anesthesia for dental surgery. **Pediatr Dent**, 1997;19(6):427-431.

17. Stenebrand A, Boman UW, Hakeberg M. Dental anxiety and temperament in 15-year-olds. **Acta Odontol Scand**, 2013;71(1):15-24.

18. Jain A, Suprabha BS, Shenoy R, Rao A. Association of Temperament with dental anxiety and behaviour of the preschool child during the initial dental visit. **Eur J Oral Sci**,2019;127(2)147-155.

19. Toledano M, Osorio R, Aguilera FS, Pegalajar J. Children's dental anxiety: influence of personality and intelligence factors. **Int J Paediatr Dent**, 1995;5(1):23-28.

20. Kim SH, Baik BJ, Kim JG, Yang YM, Kwon BW. Relationship of dental anxiety between child and parent during dental visit. **J Korean Acad Pediatr Dent**, 2005;32(2):370-375.

21. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, *et al*. The PRISMA 2020 statement: an update guideline for reporting systematic reviews. **BMJ**, 2021;372:n71.

22. Moola S, Munn Z, Sears K, Sfetcu R, Currie M, Lisy K, et al. Conducting systematyc reviews of association (etiology): The Joanna Briggs Institute's approach. Int J Evid Based Healthc, 2015;13(3):13-169.

23. Ouzani M, Hammady H, Fedorowicz Z, Elmagarmid, A. Rayyan – a web and mobile app for systematic reviews. **Syst Rev,** 2016;5(210).

24. Fowkes FG, Fulton PM. Critical appraisal of published research: introductory guidelines. **BMJ**, 1991;302(6785):1136-1140.

25. Ryan R, Hill S (2016) How to GRADE the quality of the evidence. Cochrane Consumers and Communication Group, available at http://cccrg.cochrane.org/author-resources. Version 3.0 December 2016.

26. Hulley SB, Cummings SR, Browner WS, Grady D, Hearst N, Newman TB. Delineando a pesquisa clínica: uma abordagem epidemiológica. 2.ed. Porto Alegre: Artmed; 2003

27. Venham LL, Murray P, Gaulin-Kremer E. Personality factors affecting the preschool child's response to dental stress. **J Dent Res**, 1979;58(11):2046-2051.

28. Liddell A. Personality characteristics versus medical and dental experiences of dentally anxious children, **J Behav Med**, 1989;13(2):183-194.

29. Kronina L, Rascevska M, Care R. Psychosocial factors correlated with children's dental anxiety. **Stomatologija**, 2017;19(3):84-90.

30. Pop-Jordanova N, Sarakinova O, Markovska-Simoska S, Loleska S. Anxiety and personality characteristics in children undergoing dental interventions. **Pril (Makedon Akad Nauk Umet Odd Med Nauki)**, 2013;34(3):93-103.

31. Sermet O. Emotional and medical factors in child dental anxiety. **J Child Psychol Psychatry,** 1974;15(4):313-321.

32. Klingberg G, Broberg AG. Temperament and child dental fear. **Pediatr Dent**, 1998;20(4):237-243.

33. Klingberg G, Berggren U, Carlsson SG, et al. Child dental fear: Cause-related factors and clinical effects. **Eur J Oral Sci**, 1995;103:405–412.

34. Porrit J, Buchanan H, Hall M, GilCchrist F, Marshman Z. Assessing children's dental anxiety: a systematic review of current measures. **Community Dent Oral Epidemiol**, 2013;41(2):130-142.

35. Cademartori MG, Cara G, Pinto GS, Costa VPP. Validity of the Brazilian version of the Dental Subscale of Children's Fear Survey Schedule**. Int J Paediatr Dent**, 2019;29(6):736-747.

36. Brasil. Marco legal: saúde, um direito de adolescentes. Ministério da Saúde, Secretaria de Atenção à Saúde, Área de Saúde do Adolescente e do Jovem. – Brasília: Editora do Ministério da Saúde, 2007. 60 p.

37. Klaassen M, Veerkamp J, Hoogstraten J. Predicting dental anxiety. The clinical value of anxiety questionnaires: An explorative study. **Eur J Paediatr Dent**, 2003;4(4):171-176.

38. Elm EV, Altamn DG, Egger M, Pocock SJ, Gotzsche PC, Vandenbroucke, JP. The Strengthening the Reporting of Observations Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. **J Clin Epidemiol,** 2008;61(4):344-349.

TABLE 1 - Search Strategy

DATABASE	SEARCH STRATEGY
PUBMED	(child[MeSH Terms] OR child*[Title/Abstract] OR children[MeSH Terms] OR preschool children[MeSH Terms] OR preschool*[Title/Abstract] OR preschool child[MeSH Terms] OR infant[MeSH Terms] OR infant*[Title/Abstract] OR infants[MeSH Terms] OR schoolchild*[Title/Abstract] OR kid[Title/Abstract] OR kids[Title/Abstract] OR pediatric*[Title/Abstract] OR paediatric*[Title/Abstract] OR pedodontics*[Title/Abstract] OR adolescent[MeSH Terms] OR adolescen*[Title/Abstract] OR adolescence[MeSH Terms] OR adolescents[MeSH Terms] OR Teenagers[MeSH Terms] OR Teenager*[Title/Abstract] OR teens[MeSH Terms] OR Teens[Title/Abstract] OR youth[MeSH Terms] OR youth[Title/Abstract]) AND (temperament[MeSH Terms] OR temperament[Title/Abstract] OR personality[MeSH Terms] OR personality[Title/Abstract]) AND (dental fear[MeSH Terms] OR dental fear[Title/Abstract] OR dental anxiety[MeSH Terms] OR dental anxiety[Title/Abstract] OR dental phobia[MeSH Terms] OR dental phobia[Title/Abstract] OR odontophobia[MeSH Terms] OR odontophobia[Title/Abstract])
SCOPUS	TITLE-ABS-KEY (child* or children or "preschool children" or preschool* or "preschool child" or infant* or "schoolchild*" or kid or kids or pediatric* or paediatric* or pedodontics* or adolescen* or adolescence or teenager* or teens or youth) and TITLE-ABS-KEY (temperament or personality) and TITLE-ABS-KEY ("dental fear" or "dental anxiety" or "dental phobia" or odontophobia)
COCHRANE	#1 MeSH descriptor: [Child] #2 MeSH Descriptor: [Child, Preschool] #3 MeSH Descriptor: [Adolescent] #4 MeSH Descriptor: [Infant] #5 children #6 preschool children #7 preschool child #8 schoolchild #9 preschool #10preschoolers #11 childhood #12 kid #13 kids #14 pediatric #15 pediatrics #16 paediatric #17 paediatrics #18 pedodontics #19 adolescence #20 teenagers #21 teens #22 youth #24 MeSH Descriptor: [Temperament] #25 MeSH Descriptor: [Personality] #27 MeSH Descriptor: [Dental Anxiety] #28 dental fear #29 dental phobia #30 odontophobia #23 AND #26 AND #31
WEB OF SCIENCE	TS=child or TS=children or TS="preschool children" or TS="preschool child" or TS=preschool or TS=preschoolers or TS=infant or TS=infants or TS=childhood or TS="school child" or TS=kid or TS=kids or TS=pediatric or TS=pediatrics or TS=paediatric or TS=paediatrics or TS=pedodontic or TS=pedodontics or TS=adolescent or TS=adolescence or TS=adolescents or TS=teens or TS=youth and TS=temperament or TS=personality and TS="dental fear" or TS="dental anxiety" or TS="dental phobia" or TS=odontophobia

EMBASE	(('child'/exp OR 'child' OR child:ti,ab,kw OR children:ti,ab,kw OR 'preschool child'/exp OR 'preschool child' OR 'preschool child':ti,ab,kw OR 'preschool children':ti,ab,kw OR preschool:ti,ab,kw OR 'infant'/exp OR 'infant' OR infant:ti,ab,kw OR infants:ti,ab,kw OR 'school child'/exp OR 'school child' OR 'school child':ti,ab,kw OR kid:ti,ab,kw OR kids:ti,ab,kw OR 'pediatrics'/exp OR 'pediatrics' OR peadiatrics:ti,ab,kw OR pedodontics:ti,ab,kw OR 'adolescent'/exp OR 'adolescent' OR adolescent:ti,ab,kw OR adolescents:ti,ab,kw OR 'adolescence'/exp OR 'adolescence' OR adolescence:ti,ab,kw OR teens:ti,ab,kw OR teenagers:ti,ab,kw OR 'juvenille' OR youth:ti,ab,kw)
	AND ('temperament'/exp OR 'temperament') OR temperament:ti,ab,kw OR 'personality'/exp OR 'personality' OR personality:ti,ab,kw)
	AND ('dental anxiety'/exp OR 'dental anxiety') OR 'dental fear':ti,ab,kw OR 'dental phobia'/exp OR 'dental phobia' OR 'dental phobia':ti,ab,kw OR 'dental anxiety':ti,ab,kw OR odontophobia:ti,ab,kw))
LILACS – VHL	((tw:(child)) OR (tw:(children)) OR (tw:("preschool children")) OR (tw:("preschool child")) OR (tw:(preschool)) OR (tw:(preschoolers)) OR (tw:(infant)) OR (tw:(infants)) OR (tw:(childhood)) OR (tw:("school child")) OR (tw:(kid)) OR (tw:(kids)) OR (tw:(pediatric)) OR (tw:(pediatrics)) OR (tw:(paediatric)) OR (tw:(paediatrics)) OR (tw:(pedodontic)) OR (tw:(pedodontics)) OR (tw:(adolecent)) OR (tw:(adolescence)) OR (tw:(adolescents)) OR (tw:(teens)) OR (tw:(youth)))
	AND ((tw:(temperament)) OR (tw:(personality)))
	AND ((tw:("dental fear")) OR (tw:("dental anxiety")) OR (tw:("dental phobia")) OR (tw:(odontophobia)))
PsycINFO	((title: (dental fear)) *OR* (abstract: (dental fear)) *OR* (title: (dental anxiety)) *OR* (abstract: (dental anxiety)) *OR* (title: (dental phobia)) *OR* (abstract: (dental phobia)) *OR* (title: (odontophobia)) *OR* (abstract: (odontophobia)))
	AND ((title: (temperament)) *OR* (abstract: (temperament)) *OR* (title: (personality)) *OR* (abstract: (personality)))
	AND ((title: (child)) *OR* (abstract: (child)) *OR* (title: (children)) *OR* (abstract: (children)) *OR* (title: (preschool)) *OR* (abstract: (preschool)) *OR* (title: (adolescent)) *OR* (abstract: (adolescent)) *OR* (title: (kid)) *OR* (abstract: (kid)) *OR* (title: (infant)) *OR* (abstract: (infant)) *OR* (title: (teenagers)) *OR* (abstract: (teenagers)) *OR* (title: (teens)) *OR* (abstract: (teens)) *OR* (title: (youth)) *OR* (abstract: (youth)))
OPEN GRAY	child and personality and dental anxiety
GOOGLE SCHOOLAR	child and personality and dental anxiety

TABLE 2 – Studies' characteristics

STUDY	COUNTRY	STUDY DESING	PARTICIPANT LOCATION	NO. OF PARTICIPANTS	AGE	TEMPERAMENT MEASURES	DFA MEASURES	DFA ASSESSMENT	RESULTS AND CONCLUSION
Sermet, 1974	Wales	Case-control	Dental Hospital	200	5-12 years	Rutter's Child Scale A	VAS	Prior to prophylaxis	Children with Neurotic tendencies had higher DFA.
Venham *et al.*, 1979	USA	Cross-sectional	Dental Clinic	26	3-5 years	PSPQ	Clinical anxiety scale and heart rate	Prior to first dental visit	Tendencies to passive withdrawal r=0,44, pessimism r=0,51 and aggressiveness r=0,83 were moderate and strong positive correlated to DFA.
Liddel, 1989	Canada	Cross-sectional	Schools	179	12 years	DOTS-R	DAS; FSSC-R	Telephone interview – parent report	No dimensions of temperament were associated to DFA.
Toledano *et al.,* 1995	Spain	Cross-sectional	University Dental Clinic	40	8-16 years	EPQ-J	STAIC	Prior to first dental visit	No dimensions of temperament were associated to DFA.
Quinonez *et al.*, 1997	Canada	Cross-sectional	Children's Hospital	51	2-5 years	EAS	CMAS-R	Prior to general anesthesia	Emotionality r=0.53 and shyness r=0.30 tendencies were weakly positive correlated to DFA
Klingberg *et al.,* 1998	Sweden	Case-control	Public clinic	124	5-12 years	EAS	CDFP, CFSS-DS, Selection criteria	No information	Emotionality and shyness tendencies were associated to higher means in DFA.
Kim *et al.,* 2005	Korea	Cross-sectional	University Dental Hospital	78	3-10 years	EAS	VPT	Prior to initial dental visit	No dimensions of temperament were associated to DFA.
Stenebrand *et al.,* 2013	Sweden	Cross-sectional	Schools	221	15 years	EASI	DFS	During school visit	Emotionality r=0.31 and impulsivity r=0.29 tendencies were weakly positive correlated to DFA, activity r=-0,24 was weakly negative correlated to DFA.
Pop-Jordanova *et al.,* 2013	Macedonia	Cross-sectional	University Dental Hospital	50	7-15 years	EPQ	GASC	Prior to dental intervention	Neurotic tendencies were weakly positive correlated to DFA r=0.18.
Kronina *et al.,* 2017	Latvia	Cross-sectional	University Dental Clinic	240	4-12 years	Non validated questionnaire	CFSS-DS	Prior to a routine dental visit	No dimensions of temperament were associated to DFA.
Jain *et al.*, 2019	India	Cross-sectional	University Dental Clinic	100	3-5 years	EAS	FIS	Prior to first dental visit	Emotionality r=0.28 and shyness r=0.26 tendencies were weakly positive correlated to DFA

DFA: dental fear and anxiety; EAS: Emotionality, activity shyness survey; EASI; Emotionality, activity, shyness, sociability, impulsivity survey; PSPQ: Preschool personality questionnaire; DOTS-R: Revised dimension of temperament scale; EPQ: Eysenck Personality Questionnaire; EPQ-J: Eysenck Personality Questionnaire Junior; GASC: General anxiety scale for children; FIS: Facial Image Scale; STAIC: State trait anxiety inventory; DFS: Dental Fear Survey; VAS: Visual Analogue Scale; DAS: Dental anxiety scale and FSSC-R: Fear survey schedule for children – revised; CFSS-DS: Children fear survey scale – dental subscale; CDFP: Children dental fear; CMAS-R: Children manifested anxiety scale – revised; VPT: Venham picture test.

Table 3 – Risk of bias assessment using Fowkes and Fulton guideline

		Sermet, O - 1974	Venham *et al.*, 1979	Liddel, A - 1989	Toledano *et al.*, - 1995	Quinonez *et al.*, 1997	Klingberg, G., Broberg, A. 1998	Kim *et al.*, 2005	Pop-Jordanova *et al.*, 2013	Stenebrand *et al.*, 2013	Kronina *et al.*, 2017	Jain *et al.*, 2019
	Study design appropriate to objective?	0	0	0	0	0	0	0	0	0	0	0
Study sample representative?	Source of sample	0	++	++	0	0	0	0	++	0	0	0
	Sampling method	0	++	++	0	+	0	+	0	0	+	0
	Sample size	0	++	++	++	++	++	++	++	++	++	0
	Inclusion/exclusion criteria	++	++	++	+	+	++	0	++	+	++	0
	Non-respondents	+	+	++	+	0	0	+	+	0	+	0
Control group acceptable?	Definition of controls	0	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
	Source of controls	0	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
	Matching/randomization	0	NA	NA	NA	NA	++	NA	NA	NA	NA	NA
	Comparable characteristics	0	NA	NA	NA	NA	++	NA	NA	NA	NA	NA
Quality of measurements and outcomes?	Validity	0	+	0	0	++	+	0	0	0	++	0
	Reproducibility	0	+	+	+	++	++	+	+	0	+	+
	Blindness	0	0	+	0	0	+	0	0	0	0	0
	Quality control	++	++	++	++	++	++	++	++	0	+	0
Completeness?	Compliance	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Dropouts	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Deaths	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Missing data	+	+	+	0	0	0	0	0	0	++	0
Distorting influences?	Extraneous treatments	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Contamination	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Changes over time	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Confounding factors	0	0	0	+	0	++	0	+	0	0	+
	Distortion reduced by analysis	++	0	0	+	0	++	0	0	0	0	0

Table 3 – Risk of bias assessment using Fowkes and Fulton guideline (continue)

Results erroneously biased in a certain direction	NO	YES	YES	NO	YES	YES	NO	YES	NO	YES	NO
Serious confounding or other distorting influences	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO
Results occurred by chance	YES	YES	NO	YES	YES	NO	NO	YES	NO	NO	NO

† If the answer to each question is categorically "No" the research is probably quite sound.

Table 4 – Certainty of Evidence based on GRADE

Nº of studies Study design	Certainty Assessment					Nº of patients	Effect Relative (95% IC)	Certainty
	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations			
Overall – Association								
2 Case-control-studies	Serious†	Serious‡	not serious	Serious§	All plausible residual confounding would reduce the demonstrated effect	202	-	⊕○○○ VERY LOW
Overall – Correlation								
9 cross-sectional studies	very serious¶	not serious	not serious	not serious	none	1107	-	⊕○○○ VERY LOW

†. The evaluated studies are different regarding risk of bias.

‡. Included studies present results in different ways, and the results do not agree with each other.

§. Less than 400 participants were evaluated.

¶. Only 2, out of 9, included studies were classified as low risk of bias.

FIGURE 1 – Performed synthesis based on age, local of source, questionnaire subgroups and temperament dimensions.
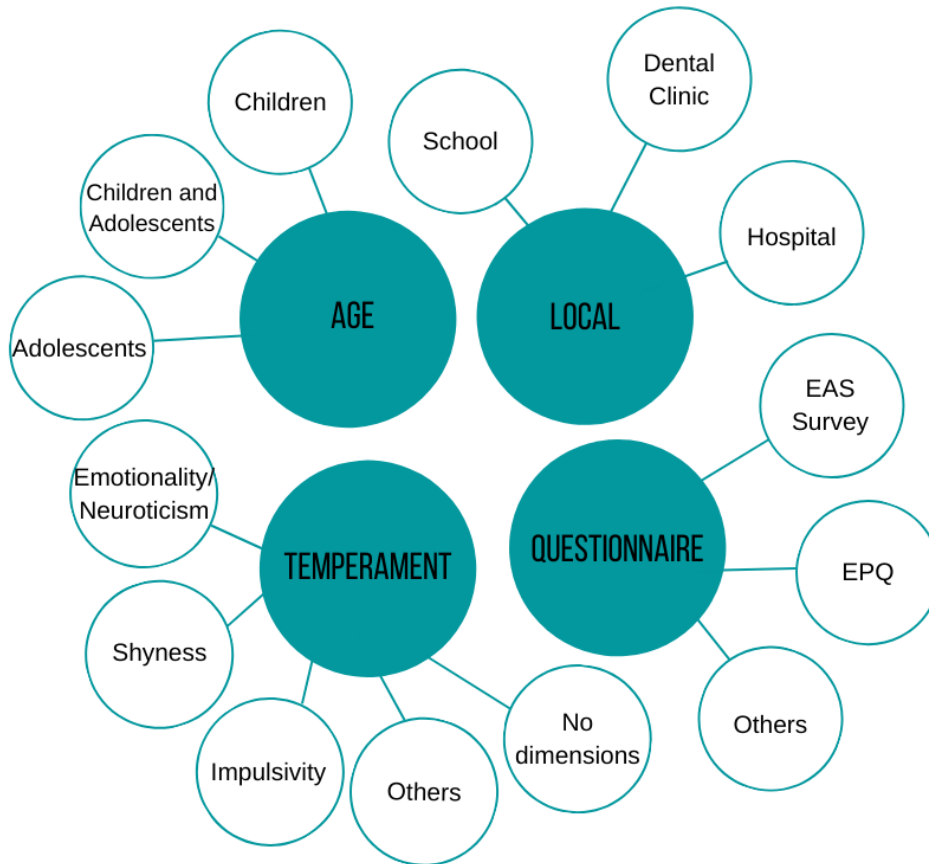
FIGURE 2 - Flow diagram of screening studies
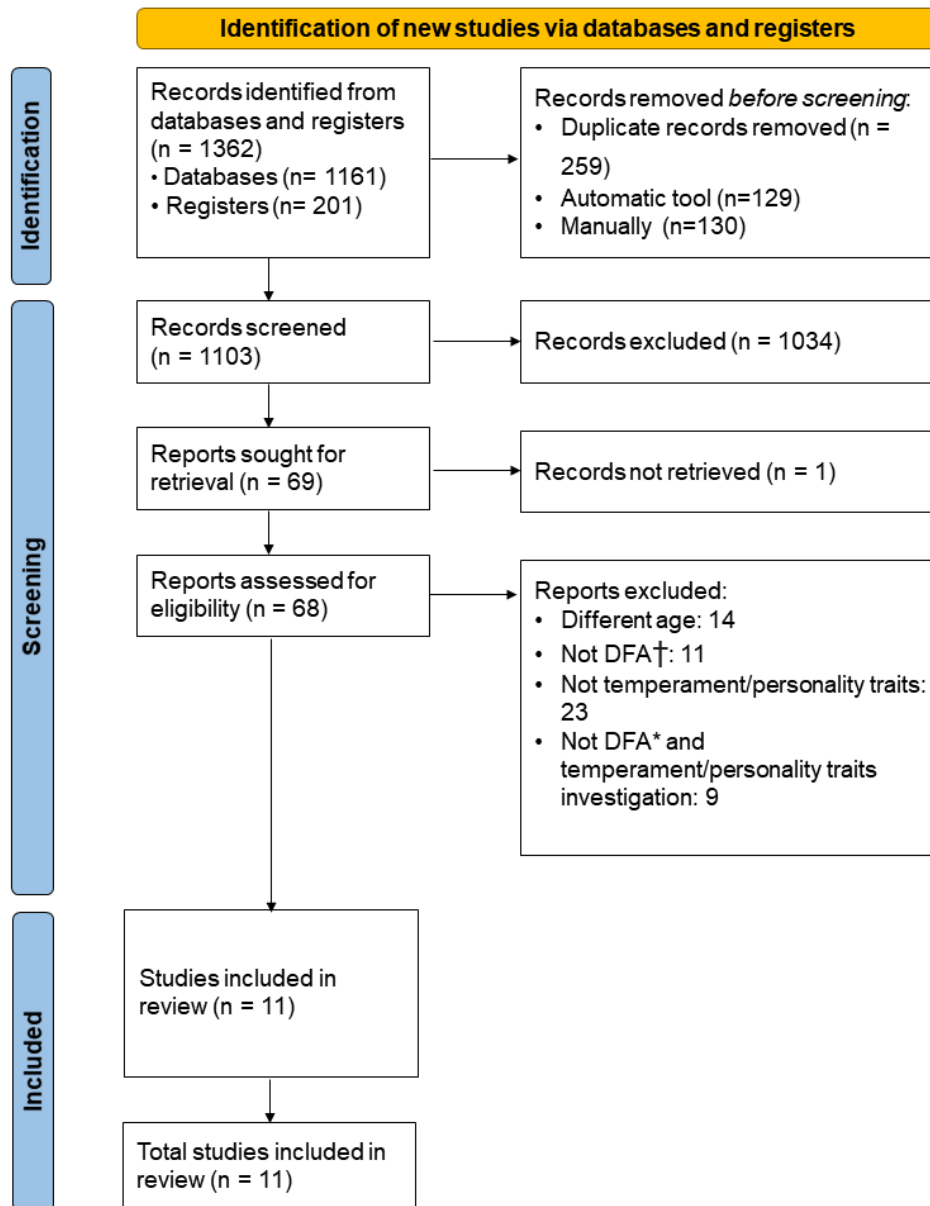
† DFA: Dental Fear and Anxiety

‡ Records identified by citation searching (n=0)

FIGURE 3 – Synthesis of the studies according to correlation/association between temperament dimensions and DFA. The greater the thickness of the arrow, the greater the number of studies.
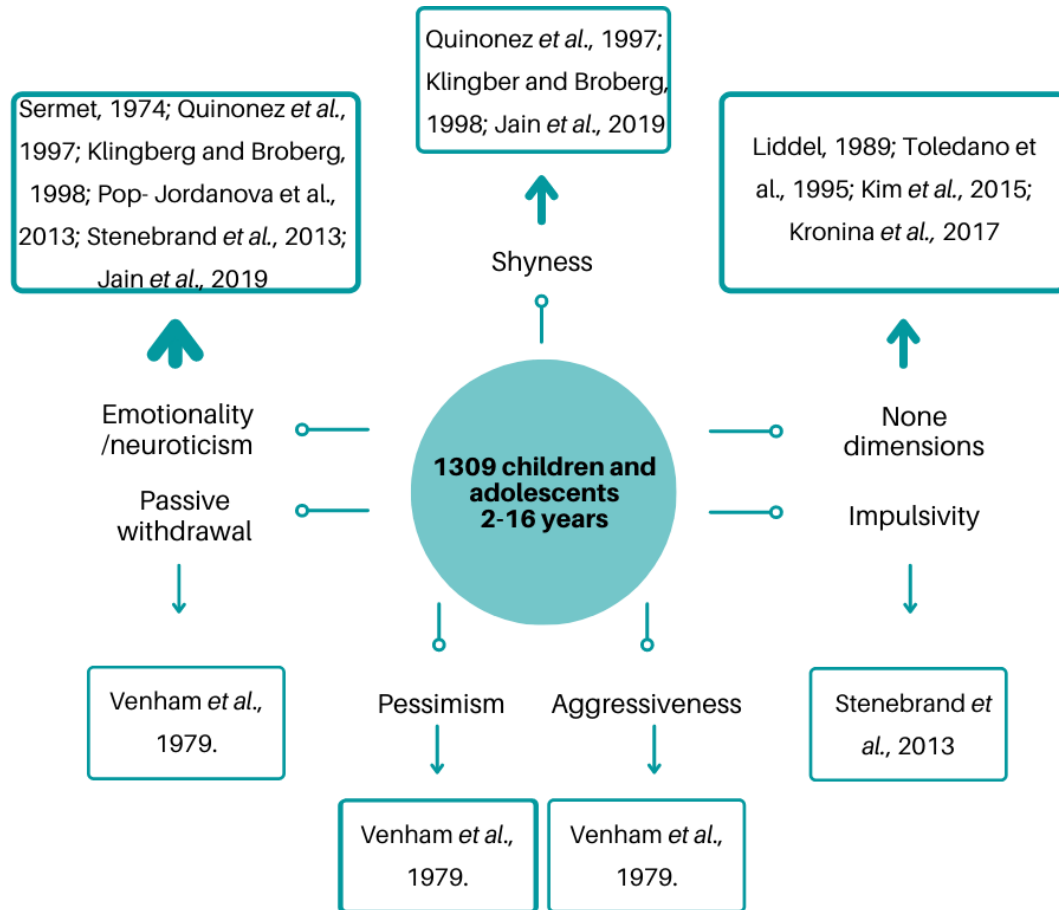
Figure 4: Synthesis of the studies according to correlation/association between temperament dimensions and DFA, stratified by temperament's theories. The greater the thickness of the arrow, the greater the number of studies.
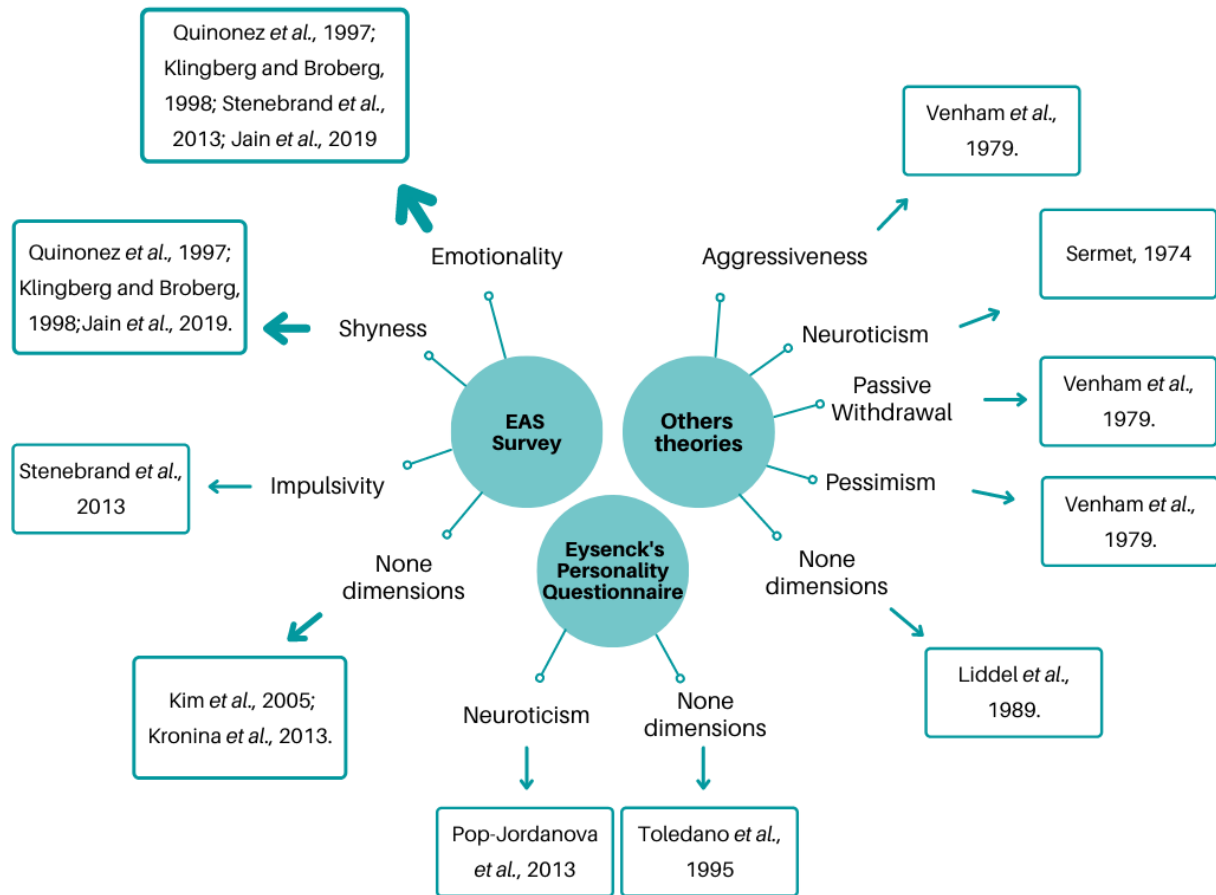
Figure 5: Synthesis of the studies according to correlation/association between temperament dimensions and DFA, stratified by different age groups. The greater the thickness of the arrow, the greater the number of studies.
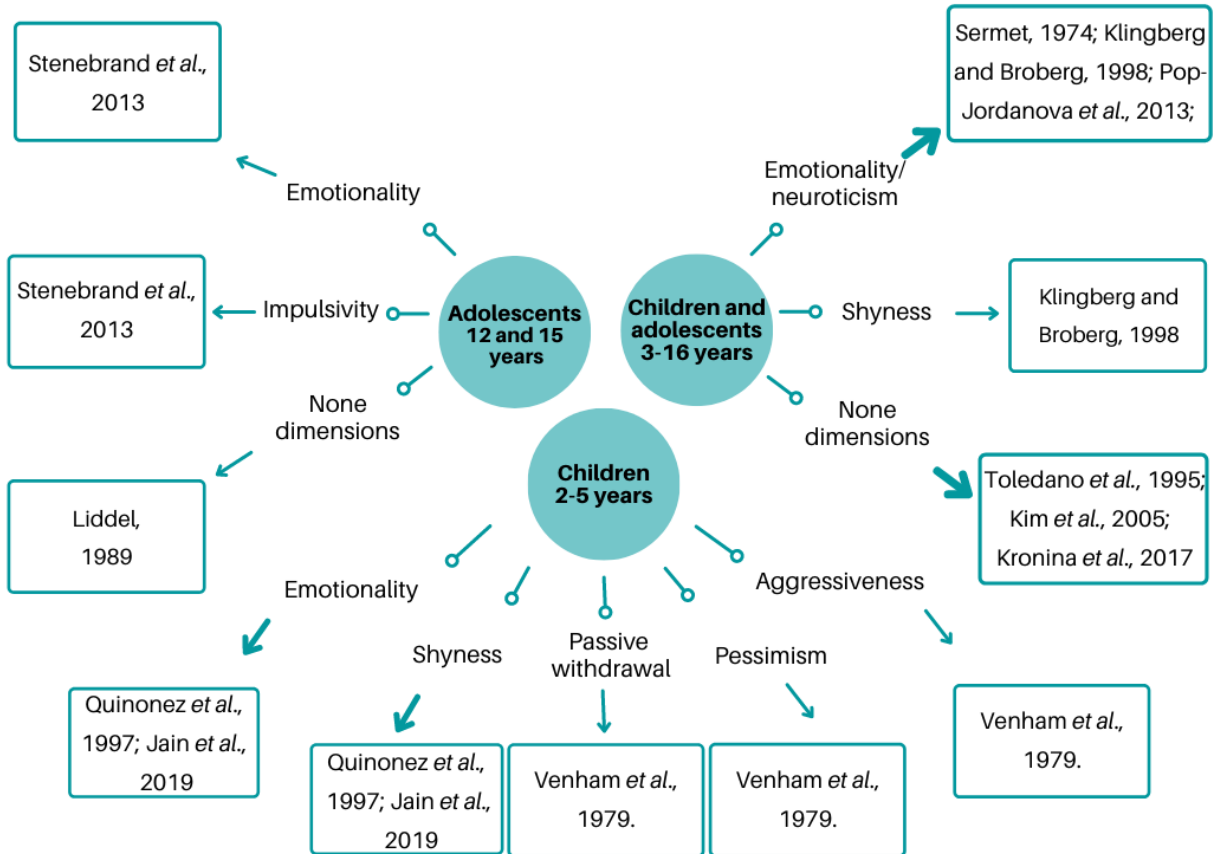
Figure 6: Synthesis of the studies according to correlation/association between temperament dimensions and DFA, stratified by different local sources. The greater the thickness of the arrow, the greater the number of studies.
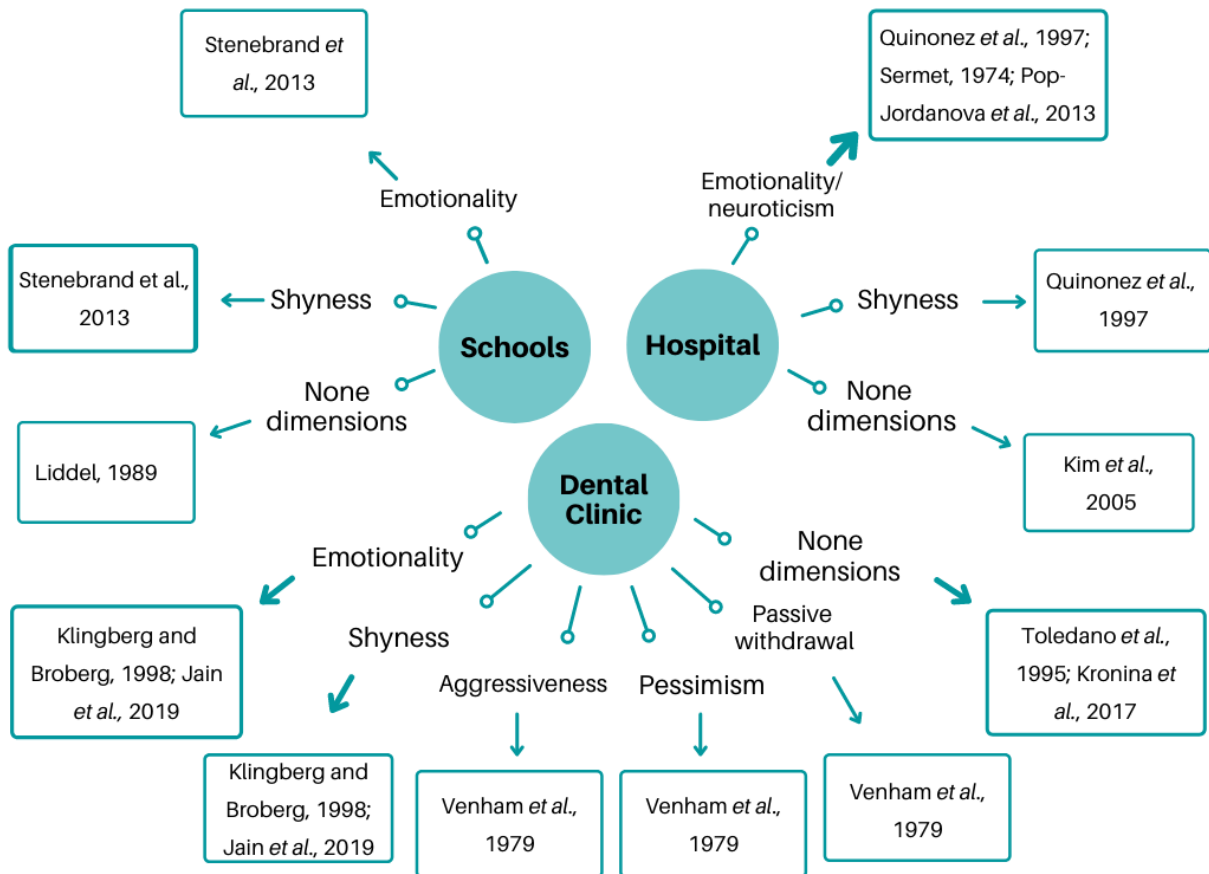
5 CONSIDERAÇÕES FINAIS

A prevalência de medo e ansiedade odontológicos ainda é elevada entre crianças e adolescentes. Esses sentimentos causam repercussões negativas, seja tornando o atendimento mais desafiador, ou causando a evitação do atendimento, tendo efeito direto na saúde bucal. Entender formas de lidar com o medo e ansiedade de crianças e adolescentes frente ao tratamento odontológico faz com que esse sentimento não se perpetue para a vida adulta, interrompendo o ciclo vicioso do medo e criando uma relação saudável entre os indivíduos e os cuidados com sua saúde bucal.

Para lidar com o medo e ansiedade odontológicos, é importante conhecer as diferentes etiologias que estão associadas a este sentimento. Além disso, diversas abordagens são possíveis quando se trata um paciente infantil. Ao conhecer o perfil do paciente odontopediatrico, podemos ter melhor noção de qual a melhor estratégia a ser utilizada com aquele paciente. Essa revisão sistemática demonstra uma possível correlação dos temperamentos de emocionalidade/neuroticismo e timidez com o medo e ansiedade odontológicos de crianças e adolescentes, dando subsídio para que o odontopediatra conheça seu paciente como um todo para se preparar para o atendimento. Estando ciente das possibilidades de lidar com elevados índices de medo e ansiedade e focando sempre na melhor experiência para o paciente, tornando o momento do atendimento agradável e reduzindo assim os índices de medo e ansiedade. No entanto, a baixa qualidade metodológica dos estudos envolvidos e a certeza de evidência classificada como muito baixa pede cautela na interpretação desses resultados.

Além disso, esse estudo reforça a importância de um atendimento integral e interdisciplinar, no qual a atuação da psicologia pode ajudar o odontopediatra a compreender melhor o perfil de seu paciente e também auxiliar no trabalho de adaptação comportamental. O auxílio da psicologia também é importante para que seja utilizada uma teoria consistente de avaliação de temperamento, que se adeque à odontopediatria da melhor maneira.

Esse trabalho também serve de base como para que novos trabalhos sejam elaborados e realizados. Estudos de base populacional, com metodologias bem delineadas, utilizando questionários validados e consistentes para a odontologia podem fornecer resultados mais confiáveis e com melhor nível de certeza de evidência, para fornecer mais embasamento para o odontopediatra. O atendimento odontológico de crianças e adolescentes devem sempre ser baseadas em práticas que promovam bem-estar do paciente e experiências positivas.

REFERÊNCIAS

ABANTO, J. *et al*. Factors determining dental anxiety in preschool children with severe dental caries. **Braz Oral Res**, São Paulo, v. 31, e13, 2017.

AMERICAN PSYCHIATRIC ASSOCIATION (APA). Diagnostic and Statistical Manual of Mental Disorders, 5th Edition: American Psychiatric Association, Washington, DC, 2014.

ARMFIELD, J.M.; STEWART, J.F.; SPENCER, A.J. The vicious cycle of dental fear; exploring the interplay between oral health, service utilization and dental fear. **BMC Oral Health**, Londres, v. 7, n. 1, 2007.

ARNRUP, K. *et al.* Lack of cooperation in pediatric dentistry – the role of child personality characteristics. **Pediatr Dent**, Chicago, v. 24, n. 2, p. 119-128, 2002.

BERGGREN, U.; MEYNERT, G. Dental fear and avoidance: causes, symptoms and consequences. **J Am Dent Assoc**, Chicago, v. 109, n. 2, p. 247-251, 1984.

BUSATO, P. *et al*. Influence of maternal anxiety on child anxiety during dental care: cross-sectional study. **São Paulo Med J**, São Paulo, v. 135, n. 2, p. 116-122, 2017.

BUSS, A.H.; PLOMIN, R. **Temperament: Early Developing Personality Traits**. Nova Jersey, Lawrence Erlbaum Associates, 1984. v. 3, 193p.

CADERMATORI, M.G. *et al*. Validity of the Brazilian version of the Dental Subscale of Children's Fear Survey Schedule. **Int J Paediatr Dent**, Oxford, v. 29, n. 6, p. 736-747, 2019.

CALTABIANO, M.L. *et al*. Dental anxiety in patients attending a student dental clinic. **BMC Oral Health**, Londres, v. 18, n. 1, p. 48, 2018.

CIANETTI, S. *et al*. Dental fear/anxiety among children and adolescents. A systematic review. **Eur J Paediatr Dent**, Milão, v.18, n. 2, p. 121-130, 2017.

COLARES, V. *et al*. Dental anxiety and dental pain in 5- to 12-yearold children in Recife, Brazil. **Eur Arch Paediatr Dent**, Londres. v. 14, n. 1, p. 15-19, 2013.

ELM, E.V. *et al*. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observations studies. **J Clin Epidemiol**, Nova Iorque, v.61, n. 4, p. 344-349, 2008.

EYSENCK, H.J. The definition and measurement of psychoticism. **Person Individ Diff**, Oxford, v. 13, n. 7, p. 757-785, 1992.

EYSENCK, H.J; EYSENCK, S.B.G. **Manual of the Eysenck Personality Inventory**. Kent, Hodder and Stoughton, 1964.

FOWKES, F.G; FULTON, P.M. Critical appraisal of published research: introductory guidelines. **BMJ**, Londres, v. 302 n. 6785, p. 1136-1140, 1991.

GRISOLIA, B.M. *et al.* Prevalence of dental anxiety in children and adolescents globally: A systematic review and meta-analyses. **Int J Paediatr Dent**, Oxford, v. 31, n. 2, p. 168-183, 2020.

HOWARD, K.E.; FREEMAN, R. Reliability and validity of a faces version of the Modified Child Dental Anxiety Scale. **Int J Paediatr Dent**, Oxford, v17, n. 4, p. 281-288, 2017.

HULLEY, S.B. *et al.* **Delineando a pesquisa clínica: uma abordagem epidemiológica**. 2ª Ed. Porto Alegre: Editora Artmed; 2003, 384p.

JAIN, A. *et al.* Association of Temperament with dental anxiety and behaviour of the preschool child during the initial dental visit. **Eur J Oral Sci**, Copenhagem, v.127, n. 2, p. 147-155, 2019.

KIM, S.H. *et al.* Relationship of dental anxiety between child and parent during dental visit. **J Korean Acad Pediatr Dent**, Seoul, v. 32, n. 2, p. 370-375, 2005.

KLAASSEN, M.; VEERKAMP, J.; HOOGSTRATEN, J. Predicting dental anxiety. The clinical value of anxiety questionnaires: an explorative study. **Eur J Paeditr Dent**, Milão, v. 4, n. 4, p. 171-176, 2003.

KLEIN, U.; MANANGKIL, R.; DeWITT, P. Parents' ability to assess dental fear in their six-to 10-year-old children. **Pediatr Dent**, Chicago, v. 37, n. 5, p. 436-441, 2015.

KLINGBERG, G. *et al.* Child dental fear: cause-related factors and clinical effects. **Eur J Oral Sci**, Copenhagem, v. 103, n. 6, p. 405-412, 1995.

KLINGBERG, G.; BROBERG, A.G. Dental fear/anxiety and dental behaviour management problems in children and adolescents: a review of prevalence and concomitant psychological factors. **Int J Paediatr Dent**, Oxford, v. 17, n. 6, p. 391-406, 2007.

KLINGBERG, G.; BROBERG, A.G. Temperament and child dental fear. **Pediatr Dent**, Chicago, v.20, n. 4, p. 237-243, 1998.

KRONINA, L.; RASCEVSKA, M.; CARE, R. Psychosocial factors correlated with children's dental anxiety. **Stomatologija**, Kaunas, v. 19, n. 3, p. 84-90. 2017.

LIDDELL, A. Personality characteristics versus medical and dental experiences of dentally anxious children, **J Behav Med**, New York, v. 13, n. 2, p. 183-194, 1990.

MOOLA, S. *et al.* Conducting systematic reviews of association (etiology): The Joanna Briggs Institute's approach. **Int J Evid Based Healthc**, Sydney, v.13, n. 3, p.163-169, 2015.

MORGAN, A. G., PORRIT, J. Background and Prevalence on Dental Fear and Anxiety. In: CAMPBELL, C. **Dental Fear and Anxiety in Pediatric Patients**. Cham: Springer, 2017. Chap 1, p, 3-19.

ÖHMAN, A. Fear and Anxiety: Overlaps and dissociation. In: LEWIS, M.; HAVILAND-JONES, J.M.; BARRET, L.F(Eds). **Handbook of Emotions.** 3.ed. Nova Iorque: The Guilford Press, 2008. Chap 44, p. 709-729.

OUZANI, M. *et al*. Rayyan – a web and mobile app for systematic reviews. **Syst rev,** Londres, v.5 n. 210, 2016.

PAGE, M.J. *et al*. The PRISMA 2020 statement: an update guideline for reporting systematic reviews. **BMJ**, Londres, v. 372, n. 71, 2021.

PEREIRA, P.C.; GUZZO, R.S.L. Individual Differences: temperament and personality; importance of the theory. **Rev Estudos de Psicologia,** Campinas, v. 19, n.1, p. 91-100, 2002.

POP-JORDANOVA, N. *et al*. Anxiety and personality characteristics in children undergoing dental interventions. **Pril (Makedon Akad Nauk Umet Odd Med Nauki)**, Escópia, v. 34, n.3, p.93-103, 2013.

PORRIT, J. *et al*. Assessing children's dental anxiety: a systematic review of current measures. **Community Dent Oral Epidemiol**, Copenhagem, v.41, n. 2, p. 130-142, 2013.

QUINONEZ, R. *et al*. Temperament and trait anxiety as predictors of child behavior prior to general anesthesia for dental surgery. **Pediatr Dent**, Chicago, v. 19, n. 6, p. 427-431, 1997.

RACHMAN, S. The conditioning theory of fear-acquisition: a critical examination. **Behav Res Ther**, Oxford, v.15, n.5, p. 375-387, 1977.

RAMOS-JORGE, J. *et al*. Degree of dental anxiety in children with and without toothache: prospective assessment. **Int J Paediatr Dent**, Oxford, v. 23, n. 2, p. 125-130, 2013.

ROTHBART, M.K. Temperament, Development and Personality. **Curr Dir Psychol Sci**, Nova Iorque, v. 16, n. 4, p. 207-2012, 2007.

RYAN, R.; HILL, S. How to GRADE the quality of the evidence. Cochrane Consumers and Communication Group. Disponível em: http://cccrg.cochrane.org/author-resources.Version 3.0. Dezembro, 2016.

SCALIONI, F.A.R. *et al*. Periodontal disease in patients with Down syndrome: A systematic review. **J Am Dent Assoc**, Chicago, v. 149, n. 7, p. 628-639, 2018.

SERMET, O. Emotional and medical factors in child dental anxiety. **J Child Psychol Psychatry,** Oxford, v. 15, n. 4, p. 313-321, 1974.

SILVEIRA, A.L.N.M.S.; MAGNO, M.B.; SOARES, T.R.C. The relationship between special needs and dental trauma. A systematic review and meta-analysis. **Dent Traumatol**, Copenhagem, v. 36, n. 3, p. 218-236, 2020.

SOARES, F.C. *et al.* Development of dental anxiety in schoolchildren: A 2-year prospective study. **Community Dent Oral Epidemiology**, Copenhagem, v. 45, n. 3, p. 281-288, 2017.

STENEBRAND, A.; BOMAN, U.W.; HAKEBERG, M. Dental anxiety and symptoms of general anxiety and depression in 15-year-olds. **Int J Dent Hyg**, Oxford, v. 11, n. 2, p. 99-104. 2013.

STENEBRAND, A.; BOMAN, U.W.; HAKEBERG, M. Dental anxiety and temperament in 15-year-olds. **Acta Odontol Scand**, Estocolmo, v. 71, n. 1, p. 15-24, 2013.

THEMESSL-HUBER, M. *et al.* Empirical evidence of the relationship between parental and child dental fear: a structured review and meta-analysis. **Int J Paediat Dent**, Oxford, v. 20, n. 2, p. 83-101, 2010.

TOLEDANO, M. *et al.* Children's dental anxiety: influence of personality and intelligence factors. **Int J Paediatr Dent**, Oxford, v. 5, n. 1, p. 23-28, 1995.

VENHAM, L.L.; MURRAY, P.; GAULIN-KREMER, E. Personality factors affecting the preschool child's response to dental stress. **J Dent Res**, Chicago, v. 58, n. 11, p. 2046-2051, 1979.

ANEXO A – SUPPLEMENTARY TABLE 1 - Risk of bias criteria

Study design appropriate to objective?	Prevalence - Cross-sectional Prognosis - Cohort Treatment - Controlled trial Cause - Cohort, case-control, cross-sectional	(0) If the study is appropriate to its objective (+) Not adopted* (++) Study design is not appropriate to the objective.
Study sample representative?	Source of sample	(0) Cross-sectional has to represent the local population. Case and control groups were obtained from the same population source. (+) Not adopted*. (++) Cross-sectional has not represented the local population. Case and control groups were obtained from different sources.
	Sampling method	(0) Study report sample randomization. (+) Not adopted* (++) Did not use any type of randomization.
	Sample size	(0) Sample size calculation was described. (+) Did not perform sample size calculation but had a powder calculation. (++) Did not mention such sample size calculation or powder calculation.
	Inclusion/exclusion criteria	(0) Study that described such criteria. (+) Study that described only inclusion or exclusion criteria. (++) Study that did not use inclusion and exclusion criteria.
	Non-respondents	(0) Study that reported less than 20% of loss. (+) Study that reported more than 20% of loss but without difference between respondents and non-respondents' characteristics. (++) Study that reported more than 20% of loss with difference between respondents and non-respondents' characteristics.
Control group acceptable?	Definition of controls	(0) Cases and controls defined by the same methods (+) Not adopted* (++) Cases and controls defined by different methods.
	Source of controls	(0) Case and control groups obtained from the same population (+) Not adopted* (++) Case and control groups obtained from different populations
	Matching/randomization	(0) Study mentioned that case and control groups were matching (+) Not adopted* (++) Study mentioned that case and control groups were not matching or did not report about matching.
	Comparable characteristics	(0) Study mentioned the characteristics that case and control groups were matching. (+) Not adopted* (++) Study not mentioned the characteristics that case and control groups were not matching or did not report about matching.
Quality of measurements and outcomes?	Validity	(0) Study that use a previously validated instrument. (+) Not adopted*. (++) Study that use not validated instrument.
	Reproducibility	(0) Study present sufficient information on the methodology that permit reproducibility (+) Not adopted*. (++) Study whose description of the methodology was not enough to ensure their reproducibility
	Blindness	(0) Study in which the blinding did not have influence on the results. (+) Study that did not mention the use of blinding (++) Not adopted**.
	Quality control	(0) Evaluator had been trained and calibrated (+) Evaluator had been trained but not calibrated for dental fear and anxiety assessment. (++) There was no information in the study about training or calibration of evaluators
Completeness?	Compliance	NA was used if the study had a cross-sectional or case-control design
	Dropouts	
	Deaths	
	Missing data	(0) Study reports all necessary data to respond your objective. (+) Not adopted*. (++) Study did not report some data important to respond your objective.

Distorting influences?	Extraneous treatments	NA (question did not apply to study methodology)
	Contamination	
	Changes over time	
	Confounding factors	(0) Confounding factors were observed. (+) Not adopted*. (++) No confounding factors were observed.
	Distortion reduced by analysis	(0) Studies that performed statistical analysis for the confounding factors (+) Not adopted*. (++) Studies that did not perform statistical analysis to minimize the confounding factor.

NA – Not applied.

*(+) was not adopted due author judged that the absence of criteria is a major problem.

**(++) was adopted due the author judged that the absence of criteria is a minor problem due the study design

ANEXO B - SUPPLEMENTARY TABLE 2 - Excluded reports

Author	Reports excluded	
Buchanan, H	**Assessing dental anxiety in children: The Revised Smiley Faces Program.** Child Care Health Dev, 2010;36(4):534-8	Not temperament/personality traits
Arnrup K, Berggren U, Broberg, AG, Bodin, L	**A short-term follow-up of treatment outcome in groups of uncooperative child dental patients.** Eur J Paediatr Dent. 2004;5(4):216-24	Not temperament/personality traits
Brown DF,Wright FA	**Age-related changes in social and psychological models predicting dental care in children.** Prev Med. 1987;16(6):775-82	Not temperament/personality traits
Freeman R	**A fearful child attends: a psychoanalytic explanation of children's responses to dental treatment.** Int J Paediatr Dent. 2007;17(6):407-418	Not temperament/personality traits
Ten Berge M, Veerkamp JSJ, Hoogstraten J, Prins PJ	**Behavioural and emotional problems in children referred to a centre for special dental care.** Community Dent Oral Epidemiol. 1999;27(3):181-6	Not temperament/personality traits
Krikken JB, ten Cate JM, Veerkamp JSJ	**Child dental fear and general emotional problems: a pilot study.** Eur Arch Paediatr Dent. 2010:11(6):283-6	Not temperament/personality traits
Cohen LL, Francher A, MacLaren JE, Lim CS	**Correlates of pediatric behavior and distress during intramuscular injections for invasive dental procedures.** J Clin Pediatr Dent, 2006;31(1)44-7	Not temperament/personality traits
Peretz B, Efrat J	**Dental anxiety among young adolescent patients in Israel.** Int J Paediatr Dent. 2000;10(2):126-32	Not temperament/personality traits
Neverlien PO	**Dental anxiety, optimism-pessimism, and dental experience from childhood to adolescence.** Community Dent Oral Epidemiol. 1994;22(4):263-8	Not temperament/personality traits
Gustafsson A	**Dental behaviour management problems among children and adolescents--a matter of understanding? Studies on dental fear, personal characteristics and psychosocial concomitants.** Swed Dent J Suppl. 2010;(202):2 p preceding 1-46	Not temperament/personality traits
Salem K, Kousha M, Anissian A,Shahabi A	**Dental Fear and Concomitant Factors in 3-6 Year-old Children.** J Dent Res Dent Clin Dent Prospects. 2012;6(2):70-4	Not temperament/personality traits
Pop-Jordanova N	**Different Clinical Expression of Anxiety Disorders in Children and Adolescents: Assessment and Treatment.** Pril(Makedon Akad Nauk Umet Odd Med Nauki. 2019;40(1)5-40	Not temperament/personality traits
D'Alessandro G, Alkhamis N, Mattarozzi K, Mazzetti M, Piana G	**Fear of dental pain in Italian children: child personality traits and parental dental fear.** J Public Health Dent. 2016;76(3):179-83	Not temperament/personality traits
Lulić-Dukić O, Radionov D, Dukić W, Keros J	**Psychophysiological parameters and chidren's behavior during dental treatment.** Coll Antropol. 1998; 22Suppl:267-71	Not temperament/personality traits

Wright KD	**Parental presence during anaesthetic induction: Investigations of the effects of parent and child traits and parent-child interactions on child anxiety levels.** ProQuest information & learning. 2007:6749	Not temperament/personality traits
Klorman R, Ratner J, Arata CL, King JB, Sveen OB	**Predicting the child's uncooperativeness in dental treatment from maternal trait, state, and dental anxiety.** ASDC J Dent Child. 1978;45(1):62-7	Not temperament/personality traits
Hujiboom-Tan HL, Veerkamp JSJ, ten Berge M	**Prediction of dental behavior problems in preschool children.** Ned Tijdshr Tandheelkd. 2003;110(5):185-9	Not temperament/personality traits
Franco JN	**Reduction of dental anxiety: an exploratory study.** Percept Mot Skills. 1978;46(1):302	Not temperament/personality traits
Majostorovic M, Veerkamp JSJ, Skrinjaric I	**Reliability and validity of measures used in assessing dental anxiety in 5- to 15-year-old Croatian children.** Eur J Paediatr Dent. 2003;4(4):197-202	Not temperament/personality traits
Varpio M, Wellfelt B	**Some characteristics of children with dental behavior problems - 5-year follow-up of pedodontic treatment.** Swed Dent J. 1991;15(2):85-93	Not temperament/personality traits
Raadal M, Milgrom P, Weinstein P, Mancl L, Cauce AM	**The prevalence of dental anxiety in children from low-income families and its relationship to personality traits.** J Dent Res. 1995;74(8):1439-43	Not temperament/personality traits
Arnrup K, Broberg AG, Berggren U, Bodin L	**Treatment outcome in subgroups of uncooperative child dental patients: an exploratory study.** Int J Paediatr Dent. 2003;13(5):304-19	Not temperament/personality traits
Neverlien PO, Backer Johnsen T	**Optimism-pessimism dimension and dental anxiety in children aged 10-12 years.** Community Dent Oral Epidemiol. 1991;19(6):342-6	Not temperament/personality traits
Satou T, Mukaida T, Abe E, Nozaka K, Amari E	**Blood pressure changes in children during minor oral surgery.** Shoni Shikagaku Zasshi. 1990;28(3):761-9	Not DFA
Su J, Ruan W, Ye X, Wu Z, Huang X	**Children's temperament characteristics and dental fear.** Hua Xi Ko Qiang Yi Xue Za Zhi. 2007;25(4):362-4	Not DFA
Gustafsson A, Broberg A, Bodin L, Berggren U, Arnrup K	**Dental behaviour management problems: the role of child personal characteristics.** Int J Paediatr Dent. 2010;20(4):242-53	Not DFA
Arnrup K, Broberg AG, Berggren U, Bodin L	**Lack of cooperation in pediatric dentistry - The role of child personality characteristics.** Pediatr Dent. 2002;24(2):119-28	Not DFA
Tsuchiya T, Yamauchi T, Yokoi K, Yamada Y, Braham RL, Kurosu K	**Psychological studies of emotional changes in children undergoing dental treatment. 1. Changes in plethysmogram.** Aichi Gakuim Dent Sci. 1991;4:15-34	Not DFA

Hathiwala S, Acharya S, Patil S	**Personality and psychological factors: effects on dental beliefs.** J Indian Soc Pedod Prev Dent. 2015;33(2):88-92	Not DFA
Kain ZN, Mayes LC, 'Connor TZ, Cicchetti DV	**Preoperative anxiety in children: predictors and outcomes.** Arch Pediatr Adolesc Med. 1996;150912):1238-45	Not DFA
Pécina-Hrncević A, Stenvanović N	**Role of psychologic factors in dental practice with siblings.** Acta Stomatol Croat. 1991;25(2):117-21	Not DFA
Uchida T, Mukai Y, Sasa R	**Studies on the changes of adaptation with children in the dental setting. The relationship between the changes of adaptation and various psychological tests.** Shoni Shikagaku Zasshi. 1991;29(1):1-10	Not DFA
Arnrup K, Broberg AG, Berggren U, Bodin L	**Temperamental reactivity and negative emotionality in uncooperative children referred to specialized paediatric dentistry compared to children in ordinary dental care.** Int J Paediatr Dent. 2007; 17(6):419-29	Not DFA
Su J, Ye X, Ruan W, Wu Z, Huang X	**The characteristics of uncooperative children's temperament during dental treatment.** Shangai Kou Qiang Yi Xue. 2006;15(3):279-81	Not DFA
Stouthard M E, Hoogstraten J, Mellenbergh GJ	**A study on the convergent and discriminant validity of the Dental Anxiety Inventory.** Behav Res Ther. 1995;33(5):589-95	Different age
Eli I, Uziel N, Baht R, Kleinhauz M	**Antecedents of dental anxiety: learned responses versus personality traits.** Community Dent Oral Epidemiol. 1997;25(3):233-7	Different age
Klepac RK, Dowling J, Hauge G	**Characteristics of clients seeking therapy for the reduction of dental avoidance: Reactions to pain.** J Behav Ther Exp Psychiatry. 1982;13(4):293-300	Different age
Saita N, Fukuda K, Koukita Y, Ichinoe T, Kaneko Y	**Classification of factors formed dental phobia.**	Different age
Kleinhauz M, Eli I, Baht R, Shamay D	**Correlates of success and failure in behavior therapy for dental fear.** J Dent Res. 1992;71(11):1832-5	Different age
Kaakko T, Getz T, Martin MD	**Dental anxiety among new patients attending a dental school emergency clinic.** J Dent Educ. 1999;63(10):748-52	Different age
Jeddy N, Nithya S, Radhika T, Jeddy N	**Dental fear and anxiety in different gender of Chennai population.** Indian J Dent Res. 2018;29(1):10-15	Different age
Lautch H	**Dental phobia.** Br J Psychiatr. 1971;11(549):151-8	Different age
Vassend O, Willumsem T, Hoffart A	**Effects of dental fear treatment on general distress: The role of personality variables and treatment method.** Behav Modif. 2000;24(4):580-99	Different age
Sporniak-Tutak K	**Emotional states related to dental treatment.** Ann Acad Med Stein. 2000;46:253-63	Different age
Hittner JB, Hemmo R	**Psychosocial predictors of dental anxiety.** J Health Psychol. 2009;14(1):53-9	Different age
Schuurs AH, Duivenvoorden HJ, Makkes PC, Thoden van Vlezen SK, Verhage F	**Personality traits of patients suffering extreme dental anxiety.** Community Dent Oral Epidemiol. 1988;16(1):38-41	Different age

Bergdahl M, Bergdahl J	**Temperament and character personality dimensions in patients with dental anxiety.** Eur J Oral Sci. 2003;111(2):93-8	Different age
Thomson WM, Broadbent JM, Locker D, Poulton R	**Trajectories of dental anxiety in a birth cohort.** Community Dent Oral Epidemiol. 2009;37(3):209-19	Different age
Yang C, Zou H, Zou J	**Analysis on dental uncooperative behaviors of the first-visit children in clinic.** Hua Xi Kou Qiang Yi Xue Za Zhi. 2011;29(5):501-4	Not DFA* and temperament/personality traits investigation
Baldwin Jr DC	**An investigation of psychological and behavioral responses to dental extraction in children.** J Dent Res. 1966;45(6):1637-51	Not DFA* and temperament/personality traits investigation
Rocha EM, Marche TA, von Baeyer CL	**Anxiety influences children's memory for procedural pain.** Pain Res Manag. 2009;14(3):233-7	Not DFA* and temperament/personality traits investigation
Aminabadi NA, Sohrabi A, Erfanparast LK, Oskouei GS, Ajami BA	**Can birth order affect temperament, anxiety and behavior in 5 to 7-year-old children in the dental setting?** J Contemp Dent Pract. 2011;12(4):225-31	Not DFA* and temperament/personality traits investigation
Rocha EM	**Children's memories of dental procedures: Effects of individual differences, question type and temporal delay** Proquest Information & learning. 2004;1572	Not DFA* and temperament/personality traits investigation
Forneiro JC, Labarga CC, Lopez HM	**Dental anxiety.** Rev Eur Odontoestomatol. 1990;2(1):49-52	Not DFA* and temperament/personality traits investigation
Wright FAC, Lange DE	**Dental anxiety and children.** New Zealand Dental Journal. 1976;72(328):80-83	Not DFA* and temperament/personality traits investigation
Klingberg G	**Dental anxiety in children and adolescent.** Cognitive Behavioral Therapy for dental phobia and anxiety. 2013:79-88	Not DFA* and temperament/personality traits investigation
Aminabadi NA, Deljavan AS, Jamali Z, Azar FP. Oskouei SG	**The Influence of Parenting Style and Child Temperament on Child-Parent-Dentist Interactions.** Pediatr Dent. 2015;37(4):32-7	Not DFA* and temperament/personality traits investigation
Quirke B	**Factors influencing anxiety and behaviour in the dental setting.** Dent Update. 2003;30(8):462	Not retrieved

*DFA: Dental Fear and Anxiety

ANEXO C– Protocolo de submissão a plataforma PROSPERO

PROSPERO

International prospective register of systematic reviews

Systematic review

1. * Review title.

Give the title of the review in English

Are personality or temperament associated with dental fear and anxiety in children

and adolescents?

2. Original language title.

For reviews in languages other than English, give the title in the original language. This will be displayed with the English language title.

Association of children and adolescents' temperament/personality with dental fear

and anxiety: a systematic review

3. * Anticipated or actual start date.

Give the date the systematic review started or is expected to start.

21/07/2020

4. * Anticipated completion date.

Give the date by which the review is expected to be completed.

30/06/2021

5. * Stage of review at time of this submission.

Tick the boxes to show which review tasks have been started and which have been completed. Update this field each time any amendments are made to a published record.
Reviews that have started data extraction (at the time of initial submission) are not eligible for inclusion in PROSPERO. If there is later evidence that incorrect status and/or completion date has been supplied, the published PROSPERO record will be marked as retracted.
This field uses answers to initial screening questions. It cannot be edited until after registration.
The review has not yet started: No

Review stage	Started	Completed
Preliminary searches	Yes	No
Piloting of the study selection process	Yes	No
Formal screening of search results against eligibility criteria	No	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No

| Data analysis | No | No |

Provide any other relevant information about the stage of the review here.

6. * Named contact.

The named contact is the guarantor for the accuracy of the information in the register record. This may be any member of the review team.
Ana Clara Paiva

Email salutation (e.g. "Dr Smith" or "Joanne") for correspondence:

Ms Paiva

7. * Named contact email.

Give the electronic email address of the named contact.

anaa_paiva02@hotmail.com

8. Named contact address

Give the full institutional/organisational postal address for the named contact.

Av. Antonio Carlos, 6627, Pampulha, Belo Horizonte, MG, Brazil, ZIP: 31270-901

9. Named contact phone number.

Give the telephone number for the named contact, including international dialling code.

+55 031997920212

10. * Organisational affiliation of the review.

Full title of the organisational affiliations for this review and website address if available. This field may be completed as 'None' if the review is not affiliated to any organisation.
Federal University of Minas Gerais

Organisation web address:

11. * Review team members and their organisational affiliations.

Give the personal details and the organisational affiliations of each member of the review team. Affiliation refers to groups or organisations to which review team members belong.
NOTE: email and country now MUST be entered for each person, unless you are amending a published record.

Miss Ana Clara Paiva. Federal University of Minas Gerais

Dr Cristiane Baccin Bendo. UFMG

Dr Izabella Barbosa Fernandes. UFMG

Miss Daniela Rabelo Costa. UFMG

Dr Saul Martins Paiva. UFMG

Dr Marcela Baraúna Magno. UFRJ

Dr Lucianne Cople-Maia. UFRJ

12. * Funding sources/sponsors.

Details of the individuals, organizations, groups, companies or other legal entities who have funded or sponsored the review.

Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) [National

Council of Scientific and Technological Development]), Fundação de Amparo à

Pesquisa do Estado de Minas Gerais (Fapemig) [Minas Gerais State Research

Support Foundation]) and Coordenação de Aperfeiçoamento de Pessoal de

Nível Superior (CAPES) [Coordination for the Improvement of Higher Education

Personnel])

Grant number(s)

State the funder, grant or award number and the date of award

13. * Conflicts of interest.

List actual or perceived conflicts of interest (financial or academic).

None

The authors declare that they have no conflicts of interest

14. Collaborators.

Give the name and affiliation of any individuals or organisations who are working on the review but who are not listed as review team members.
NOTE: email and country must be completed for each person, unless you are amending a published record.

15. * Review question.

State the review question(s) clearly and precisely. It may be appropriate to break very broad questions down into a series of related more specific questions. Questions may be framed or refined using PI(E)COS or similar where relevant.
Are personality or temperament associated with dental fear and anxiety in children

and adolescents?

16. * Searches.

State the sources that will be searched (e.g. Medline). Give the search dates, and any restrictions (e.g. language or publication date). Do NOT enter the full search strategy (it may be provided as a link or attachment below.)
Computerized searches will be performed in the following electronic databases:

MEDLINE/PubMed, Scopus, Cochrane, Embase, Web of Science, LILACS/VHL, and

PsycINFO as well as the grey literature (Google Scholar, OpenGrey, and the

reference lists of the eligible studies). MeSH terms, synonym and free terms willbe

combined with the booleans operators "OR" and "AND" to optimize the searches. Search strategies will be adapted to each database by using specific syntax rules. There will be no restrictions on language. Indirectly, a restriction will be applied by publication date, nor idiom. Experts in the field will be contacted to identify ongoing or unpublished studies. Alerts will be put in the databases and the search will be updated until the manuscript' submission process.

17. URL to search strategy.

Upload a file with your search strategy, or an example of a search strategy for a specific database, (including the keywords) in pdf or word format. In doing so you are consenting to the file being made publicly accessible. Or provide a URL or link to the strategy. Do NOT provide links to your search **results**.
Alternatively, upload your search strategy to CRD in pdf format. Please note that by doing so you are consenting to the file being made publicly accessible.
Do not make this file publicly available until the review is complete

18. * Condition or domain being studied.

Give a short description of the disease, condition or healthcare domain being studied in your systematic review.
Fear and anxiety despite being conceptualized differently, when applied to the dental attendance, they could be used to explain the same situation, and are characterized like unpleasant feelings related to dental care and are named dental fear and anxiety (DFA). These feelings are associated to the desire from avoidance and sometimes reflect in the behavior of children and adolescents. However, the relation between DFA and dental behavior are not clear, since dental behavior has a strong influence of psychological aspects.

Temperament or personality traits are individual's characteristics that involve one's emotional responses. These characteristics are based on genetic and biologic influences rather than in the environmental determinants. In addition, they present certain stability throughout life. Since the newborn age is possible to observe such characteristics, and they correspond on how the child or adolescent will act in many situations. These assessments are based in aspects, such emotionality, shyness and reactivity when the stimuli occur.

In order to understand about the psychological influences on DFA, many studies about temperament or personality have been conducted in children and adolescents

19. * Participants/population.

Specify the participants or populations being studied in the review. The preferred format includes details of both inclusion and exclusion criteria.
Children and adolescents

20. * Intervention(s), exposure(s).

Give full and clear descriptions or definitions of the interventions or the exposures to be reviewed. The preferred format includes details of both inclusion and exclusion criteria.
Any type of temperament and/or personality

21. * Comparator(s)/control.

Where relevant, give details of the alternatives against which the intervention/exposure will be compared (e.g. another intervention or a non-exposed control group). The preferred format includes details of both inclusion and exclusion criteria.
Other temperaments and personalities

22. * Types of study to be included.

Give details of the study designs (e.g. RCT) that are eligible for inclusion in the review. The preferred format includes both inclusion and exclusion criteria. If there are no restrictions on the types of study, this should be stated.
Observational studies (Cohort Studies, Case Control Studies and Cross-Sectional

Studies).

23. Context.

Give summary details of the setting or other relevant characteristics, which help define the inclusion or exclusion criteria.
24. * Main outcome(s).

Give the pre-specified main (most important) outcomes of the review, including details of how the outcome is defined and measured and when these measurements are made, if these are part of the review inclusion criteria.
Dental fear and anxiety.

Measures of effect

Please specify the effect measure(s) for your main outcome(s) e.g. relative risks, odds ratios, risk difference, and/or 'number needed to treat.
Measures of effect will be assessed through mean, standard deviation, relative risks,

odds ratios and/or prevalence ratio.

25. * Additional outcome(s).

List the pre-specified additional outcomes of the review, with a similar level of detail to that required for main outcomes. Where there are no additional outcomes please state 'None' or 'Not applicable' as appropriate to the review
Not applicable

Measures of effect

Please specify the effect measure(s) for you additional outcome(s) e.g. relative risks, odds ratios, risk difference, and/or 'number needed to treat.
Not applicable

26. * Data extraction (selection and coding).

Describe how studies will be selected for inclusion. State what data will be extracted or obtained. State how this will be done and recorded.

The selection of the included studies will be done in two phases. In Phase 1, two independent review authors will assess the titles/abstracts of the references retrieved in the searches. References whose titles/abstracts are within the eligibility criteria will be included. References whose titles/abstracts do not provide sufficient information for a decision on inclusion/exclusion will be evaluated in Phase 2. The full text of the references will be evaluated by the two review authors independently and references meeting the eligibility criteria will be included. If discrepancies regarding inclusion/exclusion between review authors occur, a third review author will decide, in phase 2.

The data extracted from included studies will be: last name of the first author, year of publication, country where the study was conducted, sample size, age of individuals (mean and standard deviation), dental fear and anxiety measures, temperament or personality measures, and the main results regarding the association between dental fear and anxiety and temperament or personality. Data will be extracted by two review authors. If there is any disagreement, a discussion with a third review author will occur for a final decision. If any data is missing, we will contact de authors of primary studies to ask for the information. Up to five contacts will be made, one per week.

27. * Risk of bias (quality) assessment.

State which characteristics of the studies will be assessed and/or any formal risk of bias/quality assessment tools that will be used.

Two independent reviews will assess the risk of bias, using the Fowkes and Fulton Critical Assessment Guideline. Disagreements will be discussed with a third reviewer. The choice was due to its current use in other systematic reviews of pediatric dentistry with observational studies (SCALIONI et al., 2018; SILVEIRA et al., 2020). This instrument allows that cross-sectional, case-control and cohort studies can be assessed using the same guide (FOWKES and FULTON, 1991). The Fowkes and

Fulton guide evaluates the methodological quality based on important aspects such as: appropriate study design for the purpose, sample selection, control group characteristics, quality of measures and outcomes, completeness and distorting influences. Each aspect of the guide is rated as "0 - No problem", "++ - Major problem", "+ - Minor problem" and "NA - Not applicable". Based on these criteria, there is an evaluation for: 1) results biased in some direction; 2) results distorted by methodological problems; or 3) results that could occur at random. For each of these three questions, a response "Yes" or "No" is given. If the answer for all three questions was "No," then the study is considered to have a low risk of bias and reliable.

28. * Strategy for data synthesis.

Describe the methods you plan to use to synthesise data. This **must not be generic text** but should be **specific to your review** and describe how the proposed approach will be applied to your data. If meta analysis is planned, describe the models to be used, methods to explore statistical heterogeneity, and software package to be used.

The extracted data of the studies will be described in a narrative synthesis. A quantitative synthesis will be done if data are methodologically homogeneous, and a meta-analysis of data will be performed. The statistical heterogeneity of the meta-analysis will be assessed employing the prediction interval. The 95% prediction interval is the interval that includes the true effect size for 95% of all comparable studies and allows knowing how much the effect size varies across studies. When meta-analysis looks inappropriate, we will not conglomerate the results of the included studies. The software Review Manager (Rev Man) will be used.

29. * Analysis of subgroups or subsets.

State any planned investigation of 'subgroups'. Be clear and specific about which type of study or participant will be included in each group or covariate investigated. State the planned analytic approach.

We anticipate that differences regarding the type of the instrument used to collect data about temperaments and personalities among studies may take place. Such difference may occur also in instruments used to define dental fear and anxiety. Studies with different designs (cross-sectional, case-control and cohort) may

also be included. Different subgroups based on age (children and adolescents), temperament and personality types will be analysed, and if others are identified during the study they will be analysed. The subgroup analyses will be performed, pooling data of studies homogeneous methodologically, studies with the same study design and assessing similar outcomes. We are planning to employ tests of interaction between groups.

30. * Type and method of review.

Select the type of review, review method and health area from the lists below.

Type of review

Cost effectiveness
No
Diagnostic
No
Epidemiologic
No
Individual patient data (IPD) meta-analysis
No
Intervention
No
Living systematic review
No
Meta-analysis
No
Methodology
No
Narrative synthesis
No
Network meta-analysis
No
Pre-clinical
No
Prevention
No
Prognostic
No
Prospective meta-analysis (PMA)
No
Review of reviews
No
Service delivery
No
Synthesis of qualitative studies
No
Systematic review

Yes
Other
No
Health area of the review

Alcohol/substance misuse/abuse
No
Blood and immune system
No
Cancer
No
Cardiovascular
No
Care of the elderly
No
Child health
Yes
Complementary therapies
No
COVID-19
No
Crime and justice
No
Dental
No
Digestive system
No
Ear, nose and throat
No
Education
No
Endocrine and metabolic disorders
No
Eye disorders
No
General interest
No
Genetics
No
Health inequalities/health equity
No
Infections and infestations
No
International development
No
Mental health and behavioural conditions
No
Musculoskeletal
No

Neurological
No
Nursing
No
Obstetrics and gynaecology
No
Oral health
No
Palliative care
No
Perioperative care
No
Physiotherapy
No
Pregnancy and childbirth
No
Public health (including social determinants of health)
No
Rehabilitation
No
Respiratory disorders
No
Service delivery
No
Skin disorders
No
Social care
No
Surgery
No
Tropical Medicine
No
Urological
No
Wounds, injuries and accidents
No
Violence and abuse
No

31. Language.

Select each language individually to add it to the list below, use the bin icon to remove any added in error.
English

There is not an English language summary

32. * Country.

Select the country in which the review is being carried out. For multi-national

collaborations select all the countries involved.

Brazil

33. Other registration details.

Name any other organisation where the systematic review title or protocol is registered (e.g. Campbell, or The Joanna Briggs Institute) together with any unique identification number assigned by them. If extracted data will be stored and made available through a repository such as the Systematic Review Data Repository (SRDR), details and a link should be included here. If none, leave blank.

34. Reference and/or URL for published protocol.

If the protocol for this review is published provide details (authors, title and journal details, preferably in Vancouver format) Add web link to the published protocol.

Or, upload your published protocol here in pdf format. Note that the upload will be publicly accessible.

No I do not make this file publicly available until the review is complete

Please note that the information required in the PROSPERO registration form must be completed in full even if access to a protocol is given.

35. Dissemination plans.

Do you intend to publish the review on completion?

Yes

Give brief details of plans for communicating review findings.?

The dissemination will occur by means of the publication of a scientific article in a

peer reviewed and indexed journal.

36. Keywords.

Give words or phrases that best describe the review. Separate keywords with a semicolon or new line. Keywords help PROSPERO users find your review (keywords do not appear in the public record but are included in searches). Be as specific and precise as possible. Avoid acronyms and abbreviations unless these are in wide use.

Temperament; Personality; Dental fear; Dental anxiety; Child; Adolescent.

37. Details of any existing review of the same topic by the same authors.

If you are registering an update of an existing review give details of the earlier

versions and include a full bibliographic reference, if available.

38. * Current review status.

Update review status when the review is completed and when it is published. New registrations must be ongoing so this field is not editable for initial submission. Please provide anticipated publication date

Review_Ongoing

39. Any additional information.

Provide any other information relevant to the registration of this review.

40. Details of final report/publication(s) or preprints if available.

Leave empty until publication details are available OR you have a link to a preprint (NOTE: this field is not editable for initial submission). List authors, title and journal details preferably in Vancouver format. Give the link to the published review or preprint.

ANEXO D - Normas de publicação do periódico International Journal of Paediatric Dentistry

Author Guidelines

1. SUBMISSION

Authors should kindly note that submission implies that the content has not been published or submitted for publication elsewhere except as a brief abstract in the proceedings of a scientific meeting or symposium.

Once the submission materials have been prepared in accordance with the Author Guidelines, manuscripts should be submitted online at https://mc.manuscriptcentral.com/ijpd

Click here for more details on how to use ScholarOne.

Data protection

By submitting a manuscript to or reviewing for this publication, your name, email address, and affiliation, and other contact details the publication might require, will be used for the regular operations of the publication, including, when necessary, sharing with the publisher (Wiley) and partners for production and publication. The publication and the publisher recognize the importance of protecting the personal information collected from users in the operation of these services, and have practices in place to ensure that steps are taken to maintain the security, integrity, and privacy of the personal data collected and processed. You can learn more at **https://authorservices.wiley.com/statements/data-protection-policy.html**.

Preprint policy

Please find the Wiley preprint policy here.

This journal accepts articles previously published on preprint servers.

International Journal of Paediatric Dentistry will consider for review articles previously available as preprints. Authors may also post the submitted version of a manuscript to a preprint server at any time. Authors are requested to update any pre-publication versions with a link to the final published article.

For help with submissions, please contact: **IJPDedoffice@wiley.com**

2. AIMS AND SCOPE

International Journal of Paediatric Dentistry publishes papers on all aspects of paediatric dentistry including: growth and development, behaviour management, diagnosis, prevention, restorative treatment and issue relating to medically compromised children or those with disabilities. This peer-reviewed journal features scientific articles, reviews, case reports, short communications and abstracts of current paediatric dental research. Analytical studies with a scientific novelty value are preferred to descriptive studies. Case reports illustrating unusual conditions and clinically relevant observations are acceptable but must be of sufficiently high quality to be considered for publication; particularly the illustrative material must be of the highest quality.

3. MANUSCRIPT CATEGORIES AND REQUIREMENTS

i. Original Articles

Divided into: Summary, Introduction, Material and methods, Results, Discussion, Bullet points, Acknowledgements, References, Figure legends, Tables and Figures arranged in this order.

- **Summary** should be structured using the following subheadings: Background, Hypothesis or Aim, Design, Results, and Conclusions and should be less than 200 words.

- **Introduction** should be brief and end with a statement of the aim of the study or hypotheses tested. Describe and cite only the most relevant earlier studies. Avoid presentation of an extensive review of the field.
- **Material and methods** should be clearly described and provide enough detail so that the observations can be critically evaluated and, if necessary repeated. Use section subheadings in a logical order to title each category or method. Use this order also in the results section. Authors should have considered the ethical aspects of their research and should ensure that the project was approved by an appropriate ethical committee, which should be stated. Type of statistical analysis must be described clearly and carefully.
- **Results** should clearly and concisely report the findings, and division using subheadings is encouraged. Double documentation of data in text, tables or figures is not acceptable. Tables and figures should not include data that can be given in the text in one or two sentences.
- **Discussion** section presents the interpretation of the findings. This is the only proper section for subjective comments and reference to previous literature. Avoid repetition of results, do not use subheadings or reference to tables in the results section.
- **Bullet Points:** Authors will need to provide no more than 3 'key points' that summarise the key messages of their paper to be published with their article. The key points should be written with a practitioner audience in mind under the heading:
  *Why this paper is important to paediatric dentists.

References: Maximum 30.

ii. Review Articles

May be invited by the Editor.

iii. Systematic reviews

We consider publishing systematic reviews if the manuscript has comprehensive and unbiased sampling of literature and covering topics related to Paediatric Dentistry.

References: Maximum 30.

Articles for the *International Journal of Paediatric Dentistry* should include: a) description of search strategy of relevant literature (search terms and databases), b) inclusion criteria (language, type of studies i.e. randomized controlled trial or other, duration of studies and chosen endpoints, c) evaluation of papers and level of evidence. For examples see:

Twetman S, Axelsson S, Dahlgren H et al. Caries-preventive effect of fluoride toothpaste: a systematic review. Acta Odontologica Scandivica 2003; 61: 347-355.

Paulsson L, Bondemark L, Söderfeldt B. A systematic review of the consequences of premature birth on palatal morphology, dental occlusion, tooth-crown dimensions, and tooth maturity and eruption. Angle Orthodontist 2004; 74: 269-279.

iv. Short Communications

Brief scientific articles or short case reports may be submitted, which should be no longer than three pages of double-spaced text and include a maximum of three illustrations. They should contain important, new, definitive information of sufficient significance to warrant publication. They should not be divided into different parts and summaries are not required.

References: Maximum 30.

v. Brief Clinical Reports/Case Reports

Short papers not exceeding 800 words, including a maximum of three illustrations and five references may be accepted for publication if they serve to promote communication between clinicians and researchers. If the paper describes a genetic disorder, the OMIM unique six-digit number should be provided for online cross reference (Online Mendelian Inheritance in Man).

A paper submitted as a Brief Clinical/Case Report should include the following:

- a short **Introduction** (avoid lengthy reviews of literature);
- the **Case report** itself (a brief description of the patient/s, presenting condition, any special investigations and outcomes);

- a **Discussion** which should highlight specific aspects of the case(s), explain/interpret the main findings and provide a scientific appraisal of any previously reported work in the field.
- **Bullet Points:** Authors will need to provide no more than 3 'key points' that summarise the key messages of their paper to be published with their article. The key points should be written with a practitioner audience in mind under the heading:

  *Why this paper is important to paediatric dentists.

vi. Letters to the Editor

Letters should be no more than 1,500 words, with no more than 10 references. There should be no abstract, tables or figures.

4. PREPARING THE SUBMISSION

Cover Letters

Cover letters are not mandatory; however, they may be supplied at the author's discretion.

Parts of the Manuscript

The manuscript should be submitted in separate files: title page; main text file; figures.

Title page

The title page should contain:

i. A short informative title that contains the major key words. The title should not contain abbreviations (see Wiley's **best practice SEO tips**);

ii. A short running title of less than 50 characters;

iii. The full names of the authors and a statement of author contributions, e.g.

Author contributions: A.S. and K.J. conceived the ideas; K.J. and R.L.M. collected the

data; R.L.M. and P.A.K. analysed the data; and A.S. and K.J. led the writing;

iv. The author's institutional affiliations where the work was conducted, with a footnote for the author's present address if different from where the work was conducted;

v. Acknowledgments;

vi. Word count (excluding tables)

Authorship

Please refer to the journal's authorship policy the Editorial Policies and Ethical Considerations section for details on eligibility for author listing.

Acknowledgments

Contributions from anyone who does not meet the criteria for authorship should be listed, with permission from the contributor, in an Acknowledgments section. Financial and material support should also be mentioned. Thanks to anonymous reviewers are not appropriate.

Conflict of Interest Statement

Authors will be asked to provide a conflict of interest statement during the submission process. For details on what to include in this section, see the section 'Conflict of Interest' in the Editorial Policies and Ethical Considerations section below. Submitting authors should ensure they liaise with all co-authors to confirm agreement with the final statement.

Main Text File

As papers are double-blind peer reviewed the main text file should not include any information that might identify the authors.

The main text file should be presented in the following order:

i. Title, abstract and key words;

ii. Main text;

iii. References;

iv. Tables (each table complete with title and footnotes);

v. Figure legends;

vi. Appendices (if relevant).

Figures and supporting information should be supplied as separate files.

Abstract

Abstracts and keywords are required for some manuscript types. For details on manuscript types that require abstracts, please refer to the 'Manuscript Types and Criteria' section.

Keywords

Please provide 3-6 keywords. Keywords should be taken from the list provided at submission in ScholarOne.

Main Text

- As papers are double-blind peer reviewed, the main text file should not include any information that might identify the authors.
- The journal uses British spelling; however, authors may submit using either option, as spelling of accepted papers is converted during the production process.

References

All references should be numbered consecutively in order of appearance and should be as complete as possible. In text citations should cite references in consecutive order using Arabic superscript numerals. For more information about AMA reference style please consult the **AMA Manual of Style**

Sample references follow:

Journal article

1. King VM, Armstrong DM, Apps R, Trott JR. Numerical aspects of pontine, lateral reticular, and inferior olivary projections to two paravermal cortical zones of the cat cerebellum. J Comp Neurol 1998;390:537-551.

Book

2. Voet D, Voet JG. Biochemistry. New York: John Wiley & Sons; 1990. 1223 p.

Internet document

3. American Cancer Society. Cancer Facts & Figures 2003. http://www.cancer.org/downloads/STT/CAFF2003PWSecured.pdf Accessed March 3, 2003

Tables

Tables should be self-contained and complement, not duplicate, information contained in the text. They should be supplied as editable files, not pasted as images. Legends should be concise but comprehensive – the table, legend, and footnotes must be understandable without reference to the text. All abbreviations must be defined in footnotes. Footnote symbols: †, ‡, §, ¶, should be used (in that order) and *, **, *** should be reserved for P-values. Statistical measures such as SD or SEM should be identified in the headings.

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PAIVA, A. C. F.; BITTENCOURT J. M.; MARTINS L. P.; PAIVA, S. M.; BENDO C. B. Cárie na primeira infância e sofrimentos dos pais: estudo representativo de pré-escolares brasileiros. Anais do periódico Pesquisa Brasileira em Odontopediatria e Clínica Integrada de 2020

PAIVA, A. C. F.; BITTENCOURT J. M.; MARTINS L. P.; PAIVA, S. M.; BENDO C. B. Medo odontológico autorrelatado pelas crianças atendidas na Faculdade de Odontologia da Universidade Federal de Minas Gerais: fatores associados e correlação com o medo dos pais. Anais do periódico Arquivos em Odontologia de 2018.

2- Formação complementar

English as a Medium of Instruction for Academics. (Carga horária: 16h). University of Southampton, SOUTHAMPTON, Inglaterra. 2021.

Extensão universitária em Odontopediatria: Protocolos e Evidências Científicas. (Carga horária: 32h). Universidade Federal do Piauí, UFPI, Brasil. 2020.

CURSO - PROJETO SB BRASIL 2020: O QUE FOI PLANEJADO. Sociedade Brasileira de Pesquisa Odontológica, SBPqO, Brasil. 2020.

COMO A TOMOGRAFIA CONE BEAM TRANSFORMARÁ A ODONTOLOGIA RESTAURADORA NOS PRÓXIMOS ANOS. Sociedade Brasileira de Pesquisa Odontológica, SBPqO, Brasil. 2020.

CURSO - O ESTADO DA ARTE DA PESQUISA NA ODONTOPEDIATRIA BRASILEIRA. Sociedade Brasileira de Pesquisa Odontológica, SBPqO, Brasil. 2020.

VI SIMPÓSIO DE LASER EM ODONTOLOGIA - LASERS NO CONTEXTO DA ODONTOLOGIA DE MÍNIMA INTERVENÇÃO. Sociedade Brasileira de Pesquisa Odontológica, SBPqO, Basil. 2020.

3- Atuação

Monitoria do programa de pós-graduação da UFMG, nas disciplinas de Trabalho de Conclusão de Curso I e Seminário de Iniciação a Pesquisa II. 2020/2021.

Revisão de artigo para o periódico Arquivos em Odontologia. 2021.

4- Apresentação de trabalhos

PAIVA, A. C. F.; BITTENCOURT J. M.; MARTINS L. P.; PAIVA, S. M.; BENDO C. B. Cárie na primeira infância e sofrimento dos pais: estudo representativo de pré-escolares brasileiros. 2020. 51º Encontro do Grupo Brasileiro de Professores de Ortodontia e Odontopediatria.

PAIVA, A. C. F.; BITTENCOURT J. M.; MARTINS L. P.; PAIVA, S. M.; BENDO C. B. Cárie da primeira infância, fatores associados e sofrimento dos pais de pré-escolares: estudo de base populacional. 2020. 37ª Reunião Anual da Sociedade Brasileira de Pesquisa Odontológica.

PAIVA, A. C. F. Cirurgia em Odontopediatria. 2021. Ciclo de Estudos em Odontopediatria. Faculdade de Odontologia, UFMG.

5- Participação em eventos

37ª Reunião Anual SBPqO. Cárie da primeira infância, fatores associados e sofrimento dos pais de pré-escolares: estudo de base populacional. 2020. (Congresso).

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PAIVA, A. C. F. XXIX Semana de Iniciação Científica da Faculdade de Odontologia da Universidade Federal de Minas Gerais. 2020.

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BENDO, C.B.; **PAIVA, A.C.F.** Participação em banca de Marina Line Lourdes Ribeiro. Diferenças na perspectiva de adolescentes e pais sobre o impacto da cárie dentária e da má oclusão na qualidade de vida: estudo de base populacional. 2021. Trabalho de Conclusão de Curso (Graduação em Odontologia) – Universidade Federal de Minas Gerais.

PAIVA, A.C.F. Participação em comissão avaliadora XV Encontro Científico de Faculdade de Odontologia da Universidade Federal de Minas Gerais (Modalidade Graduação). 2021