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USUÁRIOS DE CRACK E SAÚDE BUCAL

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Tese apresentada ao Programa de Pós-Graduação em Odontologia da Pontifícia Universidade Católica do Paraná, como parte dos requisitos para obtenção do título de Doutora em Odontologia, Área de Concentração em Saúde Coletiva.

Orientadora: Profª. Drª. Renata Iani Werneck
Coorientadores:
Profª. Drª. Simone Tetu Moyses
Prof. Dr. Samuel Jorge Moyses

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Curitiba, 27 de novembro de 2018.

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o que é amor incondicional e
mesmo sem entender muito o que estava acontecendo
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SUMÁRIO

RESUMO

O crack é uma droga estimulante do sistema nervoso central com alto risco de causar dependência, afetando negativamente a vida dos usuários. O objetivo geral desta tese, composta por dois artigos, foi compreender a autopercepção de saúde bucal dos usuários de crack no Brasil e seus determinantes. **Artigo 1**: este artigo teve como objetivo determinar a associação entre uso de crack e saúde bucal, por meio de uma revisão sistemática da literatura, baseada na recomendação PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). As bases de dados utilizadas foram: PubMed, Biblioteca Virtual de Saúde (BVS), Scielo e Cochrane, e para busca da literatura cinzenta, Google acadêmico e bancos de teses e dissertações das universidades que publicaram sobre o tema abordado, tendo como critérios de inclusão os estudos observacionais publicados entre junho/2008-junho/2018. Os descritores utilizados nas línguas portuguesa, inglesa e espanhola foram: “crack cocaine” OR “cocaine smoking” OR “crack users” OR “cocaína crack” AND “oral health” AND “salud bucal” AND “saúde bucal”. A pergunta da pesquisa foi: “Existe associação entre uso de crack e saúde bucal?” Após a seleção e avaliação dos estudos, nove deles foram incluídos na revisão. Os resultados indicam diminuição do pH salivar dos usuários de crack, assim como associação entre lesões na mucosa bucal, doença cárie e doença periodontal com o uso desta droga, quando comparados com não usuários; além do impacto negativo na qualidade de vida dos usuários de crack. Portanto, esta revisão sistemática da literatura sugere que o uso de crack pode ocasionar danos à saúde bucal, porém a evidência científica desta relação ainda é insuficiente, pelo nÚmero reduzido de estudos com 100% de usuários de crack e pelas diversas limitações apresentadas nos estudos. **Artigo 2**: o propósito deste artigo foi descrever os determinantes e percepções de saúde bucal dos usuários de crack no Brasil. Devido à complexidade deste fenômeno, a metodologia de métodos mistos foi utilizada, possibilitando analisar e interpretar conjuntamente os dados quantitativos e qualitativos. A pergunta de pesquisa foi “Quais são os determinantes e percepções de saúde bucal dos usuários de crack no Brasil?” O componente quantitativo foi realizado a partir dos dados da Pesquisa Nacional sobre o Uso de Crack, sendo caracterizado

como um estudo transversal. Esta pesquisa foi realizada com 7381 usuários de crack e/ou similares (pasta base, oxi, merla). As variáveis dependentes foram autopercepção de saúde bucal e autorrelato de problemas que afetam a boca, dentes e gengiva e as variáveis independentes incluíram fatores sociodemográficos, uso de drogas, estado de saúde, acesso a serviços de saúde e eventos envolvendo o sistema de justiça criminal. No componente qualitativo os dados foram coletados em um grupo focal com usuários de crack em recuperação (n=12) e a análise de conteúdo foi utilizada para coletar e analisar os dados, tendo como referencial teórico a Carta de Ottawa sobre Promoção de Saúde. A integração dos dados quantitativos e qualitativos aponta piora na saúde bucal dos usuários de crack, comparado com não usuários, assim como menor acesso ou ausência de serviços de saúde dirigidos aos usuários de drogas, destacando que os mesmos estão sujeitos a situações de vulnerabilidades e iniquidades. A metodologia utilizada oportuniza, por meio dos resultados, salientar a necessidade de efetivar políticas públicas equânimes direcionadas aos usuários de crack, englobando também as famílias dos mesmos, que adoecem juntos. Os resultados evidenciam que os serviços de saúde bucal podem ser a porta de entrada ao sistema de saúde. Tendo como essência o atendimento integral aos usuários de crack e outras drogas, há possibilidade de reintegrá-los na sociedade e consequentemente melhorar a qualidade de vida desta população.

Palavras-chave: Crack. Usuários de crack. Saúde bucal. Doenças bucais. Revisão sistemática. Vulnerabilidade. Iniquidade. Políticas públicas. Serviços de saúde bucal.

INTRODUÇÃO GERAL

O crack é um estimulante do sistema nervoso central (SNC) e sua ação no organismo pode ser dividida em duas fases: inicialmente a de estimulação (sensação de bem-estar, excitação, euforia, desinibição, aumento da autoestima e autoconfiança) seguida de uma fase de depressão (irritabilidade, desorientação e ansiedade que pode variar de leve até o pânico) (CRESPO-FERNÁNDEZ; RODRÍGUEZ, 2007; SIQUEIRA; FABRI; FABRI, 2011; LIZASOAIN; MORO; LORENZO, 2002; POMARA et al., 2012).

Os sais de cocaína (cloridrato de cocaína e sulfato de cocaína) são os dois produtos mais puros resultantes do refinamento da coca (folhas da planta *Erythroxyum coca*). Durante o processo de refinamento obtém-se um produto intermediário denominado pasta base ou pasta de cocaína, que contém muitas impurezas (éter, acetona, querosene, gasolina, ácido sulfúrico, entre outros). O crack é o produto resultante da mistura desta pasta base ou da cocaína refinada com bicarbonato de sódio e água.

Este composto é aquecido (mais de 100º C), passa por um processo de decantação, onde as substâncias líquidas e sólidas são fragmentadas; quando a porção sólida é resfriada, gera a pedra de crack. Esta pedra concentra os princípios ativos da cocaína e contém vários tipos de substâncias tóxicas (CRESPO-FERNÁNDEZ; RODRÍGUEZ, 2007; SIQUEIRA; FABRI; FABRI, 2011; LIZASOAIN; MORO; LORENZO, 2002; CASTRO et al., 2015).

Ao fumar o crack, a cocaína (princípio ativo) é rapidamente absorvida pelos capilares pulmonares e segue para a corrente sanguínea, distribuindo-se por todo organismo. Destaca-se que esta droga atravessa a barreira hematoencefálica e placentária, tendo especial afinidade pelo cérebro. Portanto, a absorção do crack é muito rápida, sendo que a ação desta droga ocorre entre 8 a 10 segundos e a duração dos seus efeitos entre 5 a 10 minutos. Como a ação e o efeito do crack são rápidos, aumenta o desejo (fissura) pela droga, fazendo com que o usuário chegue a fumar de 20 a 30 pedras por dia, portanto possui alto risco de causar dependência (POMARA et al., 2012; CASTRO et al., 2015).

O crack ocasiona muitos problemas de saúde, tais como infecções bacterianas/virais, complicações cardiovasculares, respiratórias e neurológicas; além de problemas psicológicos e sociais, entre outros (MILROY; PARAI, 2011; POMARA et al., 2012; CASTRO et al., 2015). Os extensos danos que ocorrem aos usuários de crack apontam a necessidade de estudos específicos para este grupo, visando a melhoria da qualidade de vida, assim como a vinculação dos mesmos com os serviços de saúde e assistência social (BASTOS; BERTONI, 2014).

Desde 2004, a Agenda Nacional de Prioridades de Pesquisa em Saúde sugere, entre outros, o estudo da vulnerabilidade, prevenção de problemas de saúde e dos seus determinantes biopsicossociais/culturais e o conhecimento do perfil epidemiológico dos usuários de drogas ilícitas e sua reabilitação social (CHARNOCK et al., 2004).

As situações de vulnerabilidade vividas pelos usuários de crack estão fortemente relacionadas ao contexto social do consumo desta droga. O local de uso do crack (terrenos baldios, ruas, casas abandonadas, embaixo de viadutos ou pontes, entre outros) é geralmente um ambiente violento, insalubre e permeado por conflitos. Os usuários de crack vivem constantemente com medo e desconfiados, pois a necessidade de obter mais drogas leva a prática de roubos, ameaças e comercialização do sexo, ampliando a marginalização, exclusão e vulnerabilidade deste grupo (ALMEIDA et al., 2018).

O crack não é a droga mais consumida no Brasil e no mundo, porém observa-se aumento no uso da mesma, segundo os dados do Relatório Mundial de Drogas (2018). Este relatório aponta que o mercado de cocaína está expandindo, assim como o *darknet* (mercado negro online), que apesar de retratar apenas uma parcela do tráfico de drogas como um todo, está crescendo rapidamente, podendo facilitar o acesso as drogas (UNITED NATIONS OFFICE ON DRUGS AND CRIMES, 2018). O aumento no consumo do crack pode ser atribuído ao fácil e rápido acesso as redes de vendas e distribuição, a ótima portabilidade (pois as pedras são pequenas, fáceis de serem transportadas e descartadas, caso haja alguma intervenção policial), além dos preços baixos, devido ao grau de impureza da pedra de crack, podendo explicar, em parte, o maior consumo desta droga por grupos de baixo poder aquisitivo (BOWSER, 1989; GALDURÓZ et al., 2005; SCHIFANO; CORKERY, 2007). Portanto, há necessidade de ações concretas, da comunidade nacional e internacional, para

enfrentar as consequências do uso e abuso do crack (por exemplo violência, aumento do número de mortes, impacto sobre a saúde, entre outros) que atinge os usuários, seu núcleo familiar e a sociedade em geral (UNITED NATIONS OFFICE ON DRUGS AND CRIMES, 2018).

A apresentação do crack é geralmente em forma de pedra, comercializada pelos traficantes, por tamanho ou peso, cujos valores variam entre R$5,00 e R$20,00. Entretanto, em alguns locais ele chega a ser comercializado por R$0,50, quantidade suficiente para somente uma tragada (denominada “peguinha” ou “casquinha”). Há alguns anos, a pedra geralmente possuía consistência rígida e cor amarela; porém pela adição de vários diluentes como bicarbonato de sódio, pó de vidro e de mármore, farinha, talco e fezes de animais, entre outros, a pedra passou a ser branca e pastosa (OLIVEIRA; NAPPO, 2008).

A forma mais comum de uso do crack é utilizando o cachimbo, que pode ser confeccionado com copo de iogurte ou água mineral, isqueiro, tubo de pasta de dente, tampas de garrafas PET e canos de PVC. A lata de alumínio é a principal “matéria-prima” e a que causa mais estragos, por agregar a ação da droga com os riscos do uso do metal, aliado a alta temperatura. Após o uso contínuo de um mesmo cachimbo (durante alguns dias), este acumula um resíduo negro em seu interior, popularmente conhecido como “borra, raspa, resina ou sarro”. Se esta borra for removida e fumada, pode ocasionar efeitos mais intensos que os da pedra, por ser uma forma concentrada da cocaína (PECHANSKY et al., 2007; AARON et al., 2008; OLIVEIRA; NAPPO, 2008).

A fissura (desejo marcante de usar a droga) leva ao uso compulsivo e a dependência, tornando o uso do crack um problema de saúde pública em muitos países (CHAVES et al., 2011). O consumo desta droga leva a várias consequências que afetam o usuário, núcleo familiar e social. Além disso, os usuários de crack frequentemente usam várias outras substâncias lícitas (álcool e tabaco) e ilícitas, e devem ser vistos como poliusuários (GOSSOP; MANNING; RIDGE, 2006; GRANT; HARFORD, 1990).

No Brasil, vários levantamentos epidemiológicos foram realizados com o objetivo de entender este tema tão complexo e polêmico, como o consumo de drogas. Nos anos de 2001, 2005 e 2012 estes levantamentos envolveram a população geral brasileira. Os demais foram específicos com estudantes e/ou crianças e adolescentes

em situação de rua. Estes levantamentos também são realizados frequentemente em nível mundial. Infelizmente os dados apresentados apontam, tanto no Brasil quanto em outros países, aumento no consumo de drogas, principalmente entre a população mais jovem, e a descoberta de novas substâncias ilícitas (BRASIL, 2014; UNITED NATIONS OFFICE ON DRUGS AND CRIMES, 2018; UNITED NATIONS OFFICE ON DRUGS AND CRIMES, 2017). Ressalta-se que o Brasil apresenta o maior número de cenas abertas de uso de crack, quando comparado com outros países (BASTOS; BERTONI, 2014).

Saúde bucal e o uso de drogas

Os problemas relacionados à saúde bucal estão entre os mais prevalentes associados ao abuso de drogas (SHEKARCHIZADEH et al., 2013; CURY; OLIVEIRA; SANTOS, 2017). Os estudos destacam que o consumo de drogas ilícitas tem efeitos diretos e indiretos sobre o aparecimento de doenças bucais; sendo a cárie, a doença periodontal, a erosão dental e as lesões de tecidos moles as mais prevalentes (CHO; HIRSCH; JOHNSTONE, 2005; D'AMORE et al., 2011; COLODEL et al., 2009; BAGHAIE et al., 2017; ANTONIAZZI et al., 2013; SUN et al., 2018). Os efeitos indiretos incluem mudança no estilo de vida, baixa autoestima, negligência com dieta e higiene bucal, entre outros, que são comportamentos comuns entre os usuários de substâncias psicoativas (LASLETT; DIETZE; DWYER, 2008; D'AMORE et al., 2011; COLODEL et al., 2009; MATEOS-MORENO et al., 2013; ROBINSON; ACQUAH; GIBSON, 2005; CURY et al., 2017; ANTONIAZZI et al., 2016; GUPTA et al., 2012; SHEKARCHIZADEH et al., 2013). Além disso os usuários de drogas estão expostos a situações de vulnerabilidade e sujeitos à interferência dos determinantes socioeconômicos, influenciando negativamente as condições de saúde (CUNHA et al., 2017; SINGH et al., 2018; WALLACE et al., 2015).

A saúde bucal dos dependentes químicos também é determinada pela qualidade e estilo de vida adotados pelos mesmos, pois o consumo abusivo de drogas é considerado fator de risco para as doenças bucais em populações do mundo todo (D'AMORE et al., 2011; SHETTY et al., 2010; MATEOS-MORENO et al., 2013; (SUPIC et al., 2013).

Aliado ao quadro de negligência, os usuários, na maioria das vezes, sofrem preconceitos, como apontado no artigo de Bard et al. (2016) que mostrou que a sociedade rotula o usuário como “marginal” e “criminoso”, portanto o mesmo sofre preconceito e por isto é excluído da sociedade. Este estigma também foi vivenciado nos contextos de saúde pelos usuários de drogas no estudo desenvolvido em Vancouver, no Canadá. Neste estudo, a maioria dos usuários afirmou que procurava atendimento odontológico apenas em situações de emergências, pois eram frequentemente rotulados como “indignos” ou “diferentes” e não eram envolvidos no processo de decisão de seu atendimento (BRONDANI; ALAN; DONNELLY, 2017).

A pesquisa que analisou as diferenças entre condições de saúde bucal e acesso ao tratamento odontológico, comparando dependentes de drogas e não dependentes, constatou que os usuários informaram ter maior dificuldade de acesso e consequentemente apresentavam índices significativamente maiores de problemas bucais (SHERIDAN; AGGLETON; CARSON, 2001). Em relação ao acesso aos serviços de saúde, outro artigo enfatizou que os usuários de cocaína/crack foram os que apresentaram maior dificuldade de acesso, comparando com os usuários de outras drogas (TOLEDO; GÓNGORA; BASTOS, 2017).

Este posicionamento da sociedade e principalmente dos profissionais que compõem a equipe de saúde dificulta o acesso ao sistema de saúde e consequentemente o processo de tratamento (MATEOS-MORENO et al., 2013; ROBINSON; ACQUAH; GIBSON, 2005; CURY et al., 2017; ANTONIAZZI et al., 2016; GUPTA et al., 2012; BRONDANI; ALAN; DONNELLY, 2017). Portanto, no que se refere aos cuidados odontológicos, além do limitado acesso aos serviços de saúde, geralmente os usuários de drogas estão sujeitos a condições socioeconômicas precárias e hábitos alimentares não saudáveis, agravando os problemas de saúde geral e bucal (SHEKARCHIZADEH et al., 2013; CURY et al., 2017; BAGHAIE et al., 2017).

A relevância e a intensidade dos problemas de saúde bucal dos usuários de substâncias psicoativas, devido a sua complexidade, demandam programas de cuidados odontológicos abrangentes e que envolvam tanto a promoção de saúde e prevenção/educação, quanto o tratamento em si (GUPTA et al., 2012; ROBINSON; ACQUAH; GIBSON, 2005; MARQUES et al., 2015). O restabelecimento da saúde

bucal favorece o aumento da autoestima e interação social, contribuindo no processo de reabilitação psicossocial (RIBEIRO et al., 2002).

Nos estudos que enfocam qualidade de vida e tratamento da toxicodependência, observam-se poucos com foco nos usuários de crack. Um destes estudos mostra que a qualidade de vida dos usuários de crack ativos é inversamente proporcional à frequência de uso desta droga. Quanto ao tratamento, a adesão ao mesmo pode ser afetada direta ou indiretamente pela qualidade de vida. Além disso, a estrutura familiar pode ter um impacto positivo considerável sobre o tratamento. Portanto a recuperação de usuários de crack deve estar centrada na reestruturação familiar, enfocando a saúde geral e qualidade de vida (NARVAEZ et al., 2015). Desta maneira, pode-se utilizar a qualidade de vida como um indicador no tratamento dos usuários de drogas, pois retira-se o foco do tratamento clínico, visando a satisfação com a vida (MOREIRA et al., 2015).

Como a Política Nacional sobre Drogas vigente ressalta a importância da qualidade de vida no processo de tratamento dos usuários de drogas e consequentemente na sua recuperação e reinserção na sociedade, é imprescindível estudos voltados a esta condição (MARCON et al., 2012). A implementação de políticas intersetoriais abrangentes, integrando os diversos setores (federal, estadual, municipal, sociedade civil) é fundamental para cessar o ciclo exclusão–dependência–exclusão, possibilitando a redução das desigualdades sociais e consequentemente amenizar os problemas causados pelo crack e outras drogas, que representa um grave problema social (GARCIA; KINOSHITA; MAXIMIANO, 2014).

Pesquisa Nacional sobre o Uso do Crack

Como a parte quantitativa deste estudo foi realizada a partir da análise do banco de dados resultante da Pesquisa Nacional sobre o Uso de Crack, a seguir é apresentada uma breve descrição desta pesquisa.

Há alguns anos, as cenas abertas de crack (“cracolândias”) passaram a ter destaque na agenda nacional, devido à grande evidência das mesmas nos meios de comunicação, na opinião pública, assim como no âmbito político. Para atender esta demanda, a Secretaria Nacional de Políticas sobre Drogas (SENAD) incumbiu a

Fundação Oswaldo Cruz (Fiocruz), em 2010, de elaborar e coordenar um inquérito nacional sobre o consumo de crack, pois a maioria das pesquisas realizadas anteriormente tinham sido feitas em domicílios, escolas ou clínicas/ambulatórios de reabilitação (BASTOS; BERTONI, 2014).

Foram destacadas duas dimensões de complexidade na pesquisa nacional: a primeira é em relação à extensão territorial e as desigualdades sociais e regionais no Brasil, retratadas no uso do crack. A segunda dimensão é em relação as cenas "abertas" de consumo de drogas, que apresentavam muitas diferenças entre si, algumas eram pequenas e outras com grandes concentrações de usuários, denominadas "cracolândias". Quanto ao local, algumas cenas eram afastadas e outras eram em locais próximos ao trabalho ou residência da classe média. Além disso, destaca-se a associação entre violência e cenas abertas de tráfico e consumo de drogas, resultando em dificuldades significativas na obtenção das informações dos usuários (BASTOS; BERTONI, 2014).

"O objetivo geral da Pesquisa Nacional sobre o Uso de Crack foi descrever o perfil dos usuários de crack e/ou similares (pasta base, oxi e merla) de uma amostra complexa referente a 26 capitais, Distrito Federal, 9 regiões metropolitanas e um estrato "Brasil" correspondente a municípios de médio e pequeno porte, além da zona rural, e estimar o número de usuários de crack e/ou similares (e demais drogas) em 26 capitais e Distrito Federal" (BASTOS; BERTONI, 2014).

Metodologia Métodos Mistos

Como parte da tese foi realizada utilizando esta metodologia, na sequência será descrita de maneira concisa os principais aspectos da mesma.

Os métodos mistos (MM) são definidos como um "procedimento de coleta, análise e combinação de técnicas quantitativas e qualitativas em um mesmo desenho de pesquisa" (CRESWELL; PLANO CLARK, 2011).

Os dados quantitativos mostram informações importantes e confiáveis sobre um grande número de observações, possibilitando a compreensão mais geral do fenômeno; enquanto os dados qualitativos enfocam as perspectivas subjetivas do mesmo, analisando-os em profundidade. Quando se utiliza o MM tem-se a vantagem

de fazer a integração entre os dados quantitativos e qualitativos, extraindo o melhor de cada um para responder à pergunta de pesquisa. As duas técnicas possuem potencialidades e limitações, porém no MM as limitações de um método podem ser supridas pelas potencialidades do outro, dando mais fundamento ao estudo.

Um dos desafios do MM é em relação ao tempo e recursos, além das dificuldades relativas a própria técnica. Por esse motivo, é recomendável o trabalho em equipe para desenvolver uma pesquisa desta natureza, composta por pesquisadores de áreas de conteúdos distintos (CRESWELL, 2012; CRESWELL, 2010; CRESWELL; PLANO CLARK, 2011).

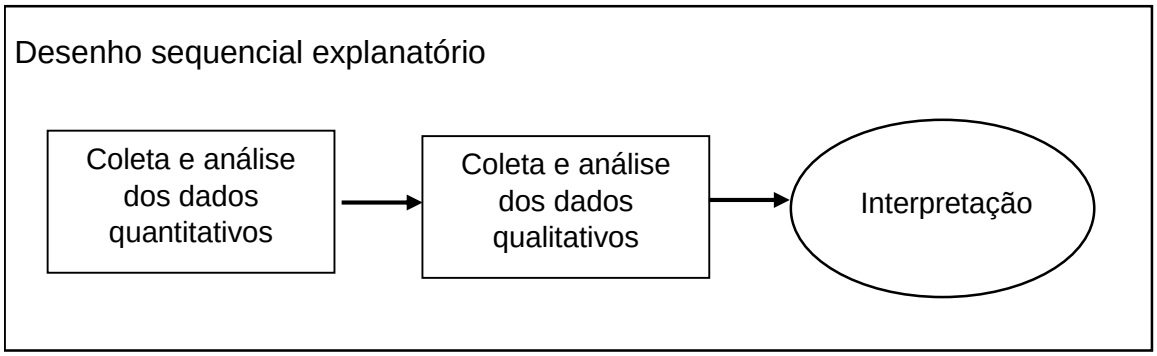
O diferencial do MM é a integração, pois a mesma permite que sejam agregados resultados inéditos ao estudo, propiciando o seu aperfeiçoamento e consequentemente melhorando a qualidade do trabalho (CRESWELL; PLANO CLARK, 2011; CRESWELL, 2010). A integração pode ocorrer no desenho de estudo, na etapa de coleta de dados e/ou no estágio de análise/interpretação dos dados.

Integração no desenho de estudo

Os principais desenhos de estudo são os sequenciais explanatório ou exploratório (componentes são interdependentes) e convergente (componentes são independentes) (FETTERS; CURRY; CRESWELL, 2013).

No desenho sequencial explanatório o pesquisador primeiro coleta e analisa os dados quantitativos, para depois coletar e analisar os qualitativos (Diagrama 1). Portanto, a interpretação dos resultados quantitativos é feita com base nos resultados qualitativos. Os sujeitos (qualitativo) são uma sub amostra (quantitativo). O foco principal deste desenho é explicar um fenômeno, interpretar resultados inesperados e detalhar determinados resultados (IVANKOVA; CRESWELL; STICK, 2006; PLUYE et al., 2018; CRESWELL, 2012).

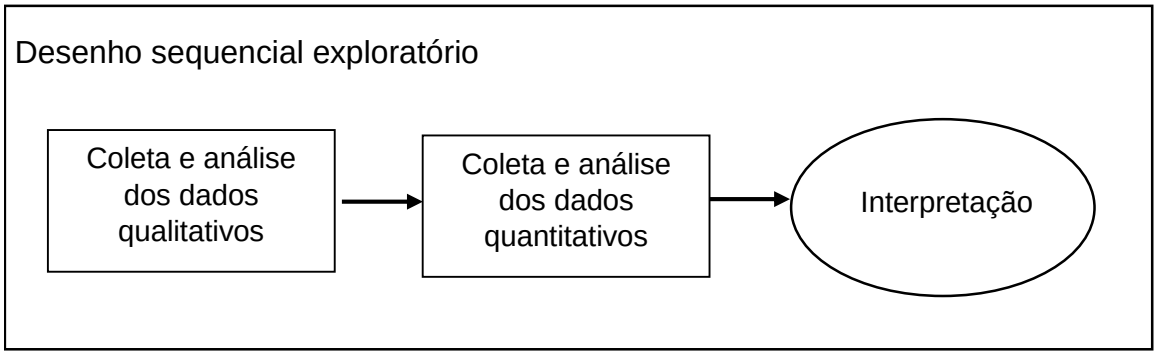
Diagrama 1



Fonte: adaptado de Creswell, 2012.

No desenho sequencial exploratório o pesquisador primeiro coleta e analisa dados qualitativos e na sequência coleta/analisa os quantitativos (Diagrama 2). Portanto a interpretação dos resultados qualitativos é feita com base nos resultados quantitativos. Este desenho também tem como base a exploração de um fenômeno, assim como testar elementos de uma nova teoria, generalizar os achados do qualitativo para diferentes amostras, determinar a distribuição de um fenômeno dentro de uma população escolhida ou testar um instrumento (PLUYE et al., 2018; CRESWELL, 2012).

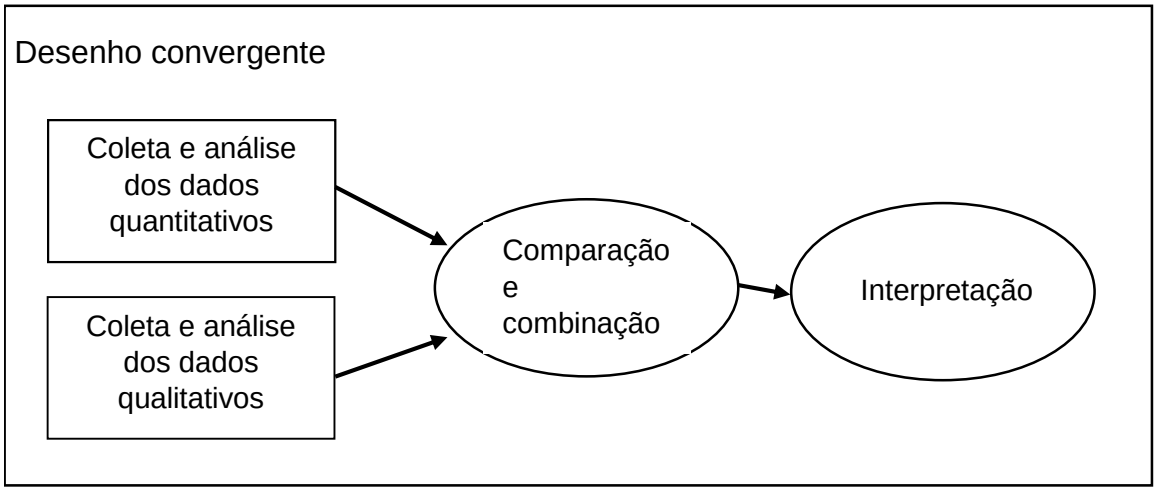
Diagrama 2



Fonte: adaptado de Creswell, 2012.

No desenho convergente os dados qualitativos e quantitativos são coletados e analisados em paralelo ou em períodos diferentes (Diagrama 3). Quando realizado em paralelo pode-se utilizar uma abordagem interativa, onde a coleta e análise de dados de um método gera mudanças na coleta de dados do outro método. Geralmente os dados quantitativos e qualitativos são analisados separadamente e depois integrados (FETTERS; CURRY; CRESWELL, 2013; PLUYE et al., 2018; CRESWELL, 2012).

Diagrama 3



Fonte: adaptado de Creswell, 2012.

Integração na coleta e análise de dados

Esta integração pode ser por (1) conexão, quando um banco de dados liga-se ao outro através de amostragem (sub amostra); (2) construção, quando um banco de dados informa a abordagem de coleta de dados do outro banco; (3) fusão, quando as duas bases de dados são reunidas para análise e comparação; (4) incorporação, quando a coleta e análise de dados estão sendo ligadas em vários pontos do processo. Em uma pesquisa a integração pode ser realizada por uma destas abordagens ou pela associação de mais de uma delas, e as escolhas metodológicas de integração são definidas de acordo com o desenho de estudo (GUETTERMAN; FETTERS; CRESWELL, 2015; FETTERS; CURRY; CRESWELL, 2013; PLUYE et al., 2018; CRESWELL, 2012).

Integração no nível de interpretação e relatórios

Esta interpretação pode ocorrer de três maneiras: (1) integração por meio da narrativa - os pesquisadores relatam os achados quantitativos e qualitativos em um único ou em uma série de relatórios ou a apresentação é feita em um único relatório, mas os resultados quantitativos e qualitativos são descritos em seções diferentes; (2) integração através de transformação de dados - primeiro é necessário converter um tipo de dados em outro tipo de dados (ou seja, qualitativo em quantitativo ou quantitativo em qualitativo), após a transformação destes dados, os mesmos são integrados com os dados que não foram transformados; e (3) integração através de *displays* conjuntos - pesquisadores integram os dados utilizando meios visuais (figura, tabela, matriz ou gráfico) para revelar novas descobertas, além das informações obtidas a partir dos resultados quantitativos e qualitativos, ou integrar dados relevantes para melhor entendimento do fenômeno estudado (GUETTERMAN; FETTERS; CRESWELL, 2015; FETTERS; CURRY; CRESWELL, 2013; CRESWELL, 2012).

Interpretação da integração de dados

Após a integração dos dados/resultados é necessário fazer uma leitura para verificar a coerência dos mesmos. Este processo recebe o nome de “ajuste” da integração e conduz a três resultados possíveis. Quando os achados de um dado confirmam os resultados do outro, tem-se uma (1) convergência, nestes casos os resultados possuem maior credibilidade. Quando os resultados dos dados quantitativos e qualitativos divergem um do outro ocorre uma (2) divergência, com ampliação das descobertas do fenômeno de interesse, portanto há necessidade de abordar diferentes aspectos do mesmo. Porém, se os achados qualitativos e quantitativos são inconsistentes, contraditórios, conflituosos e, portanto, discordam um do outro, ocorre uma (3) discordância. Nestes casos há necessidade de coletar dados adicionais ou reanalisar os bancos de dados para elucidar as diferenças ou desafiar a validade dos construtos. A integração também pode apresentar resultados que são únicos dos dados quantitativos ou qualitativos, ampliando a visão do fenômeno investigado (FETTERS; CURRY; CRESWELL, 2013; PLUYE et al., 2018). Portanto, a metodologia mista possibilita uma nova conformação para realizar as pesquisas no campo da saúde, com potencialidade de produzir novas descobertas

sobre os fenômenos multifacetados relacionados à qualidade, acesso e manutenção dos tratamentos (FETTERS; CURRY; CRESWELL, 2013; CRESWELL, 2012).

A abordagem utilizada nesta pesquisa foi a convergente. Os dados foram integrados por meio de fusão e interpretados através de *displays* conjuntos. A interpretação da integração dos dados ocorreu por convergência.

Considerando estes aspectos, julgou-se importante neste trabalho estabelecer a relação entre o perfil sócio demográfico e comportamental, uso de drogas, aspectos de saúde e acesso a serviços dos usuários de crack e outras drogas e a autopercepção dos mesmos em relação à saúde bucal e qualidade de vida. Esta análise pode colaborar com o processo de vigilância epidemiológica e dar maior subsídio para implementação de políticas públicas intersetoriais, que possam garantir a reintegração deste grupo na sociedade, objetivando maior qualidade de vida.

Diante deste quadro, o objetivo geral da tese foi compreender a autopercepção de saúde bucal dos usuários de crack e seus determinantes. Esta tese foi composta por dois artigos que estão descritos na sequência. O primeiro artigo teve como objetivo determinar a associação entre uso de crack e saúde bucal, por meio de uma revisão sistemática. O segundo artigo foi desenvolvido com o objetivo de descrever os determinantes e percepções de saúde bucal dos usuários de crack no Brasil, utilizando a metodologia de métodos mistos.

ARTIGO 1 - VERSÃO EM PORTUGUÊS

Revista: Brazilian Oral Research

ASSOCIAÇÃO ENTRE USO DE CRACK E SAÚDE BUCAL: UMA REVISÃO SISTEMÁTICA

RESUMO

O objetivo deste estudo foi avaliar, por meio da revisão sistemática da literatura, a associação entre uso de crack e saúde bucal. Esta revisão foi conduzida utilizando a recomendação PRISMA (preferred reporting items for systematic reviews and meta-analyses) para avaliar a correlação entre o uso de crack e a saúde bucal. Os estudos observacionais foram pesquisados nas bases PubMed, Biblioteca Virtual de Saúde, Scielo e Cochrane e bancos de teses e dissertações das universidades que publicaram sobre o tema, entre junho/2008-junho/2018. Foram utilizados os descritores: “crack cocaine” OR “cocaine smoking” OR “crack users” OR “cocaína crack” AND “oral health” AND “salud bucal” AND “saúde bucal” (português, inglês e espanhol). O total de 1521 estudos foram identificados. Após a leitura do título e remoção dos duplicados, permaneceram 30 estudos, destes 21 foram excluídos após a leitura na íntegra por não contemplar o objetivo desta revisão. Portanto, nove estudos foram incluídos nesta revisão sistemática de literatura. Os resultados sugerem evidências de alteração no pH dos usuários de crack; associação entre o uso desta droga com doença cárie e doença periodontal; além de maior prevalência de lesões nas mucosas bucais dos usuários de crack e piora na qualidade de vida destes, quando comparados com não usuários. Esta revisão sistemática sugere associação entre uso de crack e piora na saúde bucal, porém a evidência científica é insuficiente para comprovar tal relação, indicando a necessidade de estudos adicionais para confirmar essa hipótese. Entretanto, os resultados atuais podem auxiliar na escolha de estratégias adequadas de saúde bucal para usuários de crack.

Palavras-chave: Crack; Saúde Bucal; Doenças Bucais; Revisão Sistemática.

INTRODUÇÃO

O Relatório Mundial de Drogas (2018) apontou que 18,2 milhões de pessoas entre 15-64 anos usaram cocaína em 2016, destacando que este consumo teve um acréscimo de quase 7% em relação ao ano de 2015. Este aumento gradual vem sendo observado no período entre 2006-2016, principalmente nas Américas, África e Ásia, evidenciando o uso da pasta base de cocaína em vários países da América do Sul.[1]

O crack é obtido a partir da mistura da pasta base de cocaína com bicarbonato de sódio e água, sendo geralmente utilizado como pedra fumada.[2,3] É um estimulante potente do sistema nervoso central com alto risco de dependência.[4]

Estudos demonstram que o abuso de drogas é uma das principais causas de diversos problemas físicos e mentais, e que tanto drogas lícitas quanto ilícitas prejudicam os tecidos orais.[5,6,7,8] Portanto, cirurgiões dentistas e outros profissionais de saúde precisam reconhecer as consequências do abuso de drogas. a fim de desenvolver tratamentos orais eficazes e seguros para essa população.[9,10]

Além disso, é de suma importância que os profissionais de saúde que atendem usuários de drogas considerem o impacto dessas substâncias na qualidade de vida desses indivíduos, a fim de facilitar a redução dos riscos associados e garantir que cuidados mais abrangentes sejam prestados a esses indivíduos.[11,12]

Com relação ao crack, em particular, existe uma lacuna na literatura sobre a associação entre o uso dessa droga e a saúde bucal. Assim, o objetivo deste estudo foi avaliar essa associação revendo sistematicamente a literatura para obter a melhor evidência científica de qualidade. Essas informações podem apoiar o desenvolvimento de políticas públicas intersetoriais para promover a reintegração dessa população à sociedade e melhorar sua qualidade de vida.

METODOLOGIA

Esta revisão foi realizada de acordo com o *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA).[13] O protocolo do estudo foi registrado no *International Prospective Register of Systematic Reviews* (PROSPERO) sob o número CRD42018108065. A questão da pesquisa foi: “Existe associação entre

uso de crack e saúde bucal?”

Os artigos foram pesquisados nas bases de dados PubMed, Biblioteca Virtual de Saúde (BVS), Scielo e Cochrane. Também foram pesquisadas as bases de dados de teses e dissertações de universidades com publicações relevantes sobre o tema. Os descritores (em inglês, português e espanhol) foram selecionados do *Medical Subject Headings* (MeSH) e dos Descritores em Ciências da Saúde da Biblioteca Virtual em Saúde (BVS). As seguintes palavras-chave foram pesquisadas: “crack” OU “cocaína crack” E “saúde bucal”.

A elaboração da pergunta baseou-se no anagrama PECO, que leva em consideração a população, exposição, comparação e resultados.

P = população adulta

E = uso de crack

C = indivíduos não usuários de crack ou ausência de controle

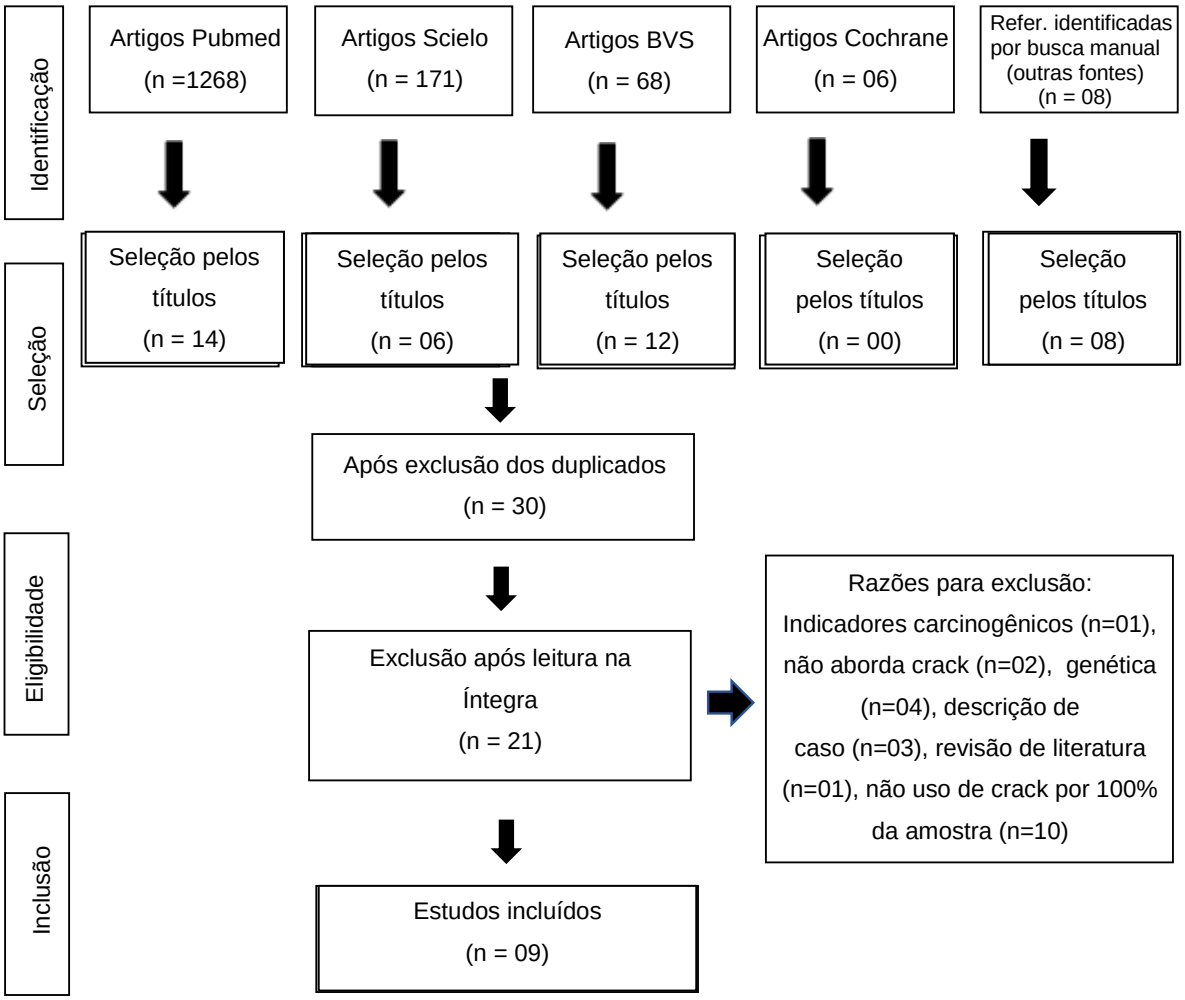
O = saúde bucal.

Critérios de inclusão

Os critérios de inclusão foram: texto integral em português, inglês e espanhol; publicados entre junho de 2008 a junho de 2018, caracterizados como estudos observacionais, onde 100% dos participantes da pesquisa fizeram uso de crack e que objetivavam avaliar a associação entre uso de crack e saúde bucal.

Processo de seleção

Os artigos foram selecionados por duas pesquisadoras independentes. Uma terceira pesquisadora foi consultada em caso de discordância. Foram identificadas 1521 pesquisas. Após a leitura do título permaneceram 40 estudos, dos quais 10 foram retirados por estarem duplicados. Na sequência foi realizada a leitura dos 30 estudos na íntegra, sendo que 21 deles foram excluídos. Um por apresentar indicadores carcinogênicos na saliva,[14] dois por não abordarem o crack,[15,16] três por serem descrição de caso,[17,18,19] um por ser revisão de literatura,[20] quatro por enfocar aspectos genéticos[21,22,23,24] e dez porque nem todos os participantes utilizaram o crack.[25,26,27,28,29,30,31,32,33,34] Ao final, 9 estudos foram incluídos nesta revisão sistemática da literatura.



Fluxograma 1 – Diagrama do fluxo do estudo (de acordo com o PRISMA)

Após a seleção final das pesquisas, cada um dos 9 estudos foi submetido a avaliação da qualidade metodológica utilizando o Instrumento para leitura crítica e avaliação de estudos epidemiológicos transversais – *Strengthening the Reporting of Observational Studies in Epidemiology* - STROBE Modificado.[35]

RESULTADOS E DISCUSSÃO

A descrição dos principais resultados está contida na Tabela 1 que inclui os autores dos artigos, ano de publicação da pesquisa, número e idade média dos participantes, tempo e quantidade de uso de crack, critérios de diagnóstico das

condições bucais, local da coleta de dados e tempo de internamento, testes estatísticos, objetivos e principais resultados/conclusões.

Dos nove estudos desta revisão, seis deles são artigos e três teses/dissertações (literatura cinzenta). Todas as pesquisas foram conduzidas no Brasil, sendo quatro delas na Região Sul e cinco no Nordeste. O desenho de estudo transversal foi utilizado nas nove pesquisas. O número médio de consumidores de crack foi de 96, variando de 54 a 242 participantes, a idade média dos mesmos foi de 30,7 anos e 90,5% eram do sexo masculino. Quanto a avaliação da qualidade dos estudos incluídos na revisão sistemática, todos foram classificados como de alta qualidade.

Em relação ao objetivo dos estudos, um abordava o perfil salivar, um a experiência de cárie dentária, dois a doença periodontal, dois os achados estomatológicos, um a disfunção temporomandibular e dois faziam relação entre saúde bucal e qualidade de vida.

Tabela 1 – Características dos estudos incluídos na revisão sistemática sobre saúde bucal e uso de crack, 2008 a 2018

Autores **Ano publicação**	**Número de participantes** **Idade média**	**Critérios de inclusão**	**Tempo** **Quantidade uso de crack**	**Critérios de diagnóstico das condições bucais**	**Local coleta de dados** **Tempo internamento**	**Testes estatísticos**	**Objetivos**	**Resultados/ Conclusões**
Woyceichoski, Costa, Araújo, Brancher, Resende, Vieira, et al. 2013	54 usuários de crack/cocaína e 40 controles pareados por sexo e idade 29,6 anos	estar internado para tratamento de reabilitação do uso de crack/cocaína	não informados	fluxo salivar - método de BanderasTarabay (hipossalivação – < 0,5 ml/min). pH - medidor digital. Capacidade tampão - método de Ericsson et al.	instituição de tratamento para dependência química não informado	Kolmogorov-Smirnov, Levene e teste *t* de Student	investigar taxa de fluxo salivar estimulada, pH salivar e capacidade tampão em usuários de crack	diminuição no pH dos usuários de crack (p=0,00), sem alterações relevantes no fluxo salivar e capacidade tampão
Antoniazzi, Zanatta, Ardenghi, Feldens 2018	106 usuários de crack e 106 controles pareados por sexo, idade e uso/não uso de tabaco 23,7 anos	pelo menos 1 ano de uso de crack, ausência de comprometimento cognitivo, internado (reabilitação uso da droga) entre ago./12 a dez./13	5,0 anos média de 24,4 pedras/dia	índice CPOD e condição periodontal – critérios da OMS (1997). Qualidade de vida - versão brasileira do *Oral Health Impact Profile* (OHIP-14)	duas instituições de tratamento para dependência química média internamento: 2,3 meses	Mann-Whitney, Qui-quadrado e Regressão logística	investigar o impacto do uso de crack/outras drogas ilícitas sobre a saúde bucal e qualidade de vida de adultos jovens	impacto negativo na qualidade de vida devido ao uso do crack/outras drogas ilícitas (p<0,00). Associação entre uso de crack e limitação funcional (p=0,00) e desconforto psicológico (p<0,00)

Autores Ano publicação	Número de participantes Idade média	Critérios de inclusão	Tempo Quantidade uso de crack	Critérios de diagnóstico das condições bucais	Local coleta de dados Tempo internamento	Testes estatísticos	Objetivos	Resultados/ Conclusões
Antoniazzi, Zanatta, Rösing, Feldens 2016	106 indivíduos expostos ao crack e 106 controles pareados por sexo, idade e uso/não uso de tabaco 23,7 anos	pelo menos 1 ano de uso de crack, ausência de comprometimento cognitivo, internado (reabilitação uso da droga) entre ago./12 a dez./13	5,0 anos média de 24,4 pedras/dia	condição periodontal – critérios da OMS (1997)	duas instituições de tratamento para dependência química média internamento: 2,3 meses	Regressões logísticas e lineares	investigar a associação entre uso de crack e periodontite	placa visível significativamente maior entre os usuários de crack (p=0,02) e associação entre crack e doença periodontal (DP) (p=0,00). Associação entre DP e tabagismo (p=0,01) e uso moderado/pesado de álcool (p=0,04)
Cury, Araújo, Oliveira, Santos 2018	40 usuários de crack/cocaína e 121 controles 33 anos	acima de 18 anos, sexo masculino (jun.13 a jun./14)	14 anos (crack/cocaína) não informado	exame da mucosa oral - critérios da OMS (1997)	Centro de Atenção Psicossocial Álcool e Drogas (CAPS ad) não se aplica	Qui-quadrado, Exato de Fisher e Regressão logística	avaliar a prevalência de lesões na mucosa bucal de usuários de crack/cocaína (homens)	lesões na mucosa bucal foram significativamente associadas ao uso de crack/cocaína (p=0,03)
Cury, Oliveira, Santos 2017	40 usuários de crack/cocaína e 120 controles 33 anos	homens, acima de 19 anos, boa saúde geral e no mínimo 6 dentes presentes na boca (jun.13 a jun./14)	14 anos (crack/cocaína) não informado	doença periodontal – critérios de Eke et al. (2012). Sangramento a sondagem – critérios de Lang e Tonetti (2003)	Centro de Atenção Psicossocial Álcool e Drogas (CAPS ad) não se aplica	Teste *t* de Student, Qui-quadrado e Regressão logística	avaliar o estado periodontal de usuários de crack/cocaína (homens) em comparação com não usuários	doença periodontal severa associada com idade (p=0,00) e maior índice de placa bacteriana (p=0,00), porém sem associação com crack/cocaína

Autores Ano publicação	Número de participantes Idade média	Critérios de inclusão	Tempo Quantidade uso de crack	Critérios de diagnóstico das condições bucais	Local coleta de dados Tempo internamento	Testes estatísticos	Objetivos	Resultados/ Conclusões
Cury, Oliveira, Andrade, Freitas, Santos 2017	40 usuários de crack/cocaína e 120 controles 33 anos	homens, acima de 19 anos, boa saúde geral e no mínimo 6 dentes presentes na boca (jun.13 a jun./14)	14 anos (crack/cocaína) não informado	índice CPOD – critérios da OMS (1997)	Centro de Atenção Psicossocial Álcool e Drogas (CAPS ad) não se aplica	Qui-quadrado e Regressão logística	avaliar a associação entre uso de crack/cocaína e saúde bucal (CPOD) em homens	associação positiva entre uso de crack/cocaína e cárie (p=0,00) e negativa entre uso de crack/cocaína e: dentes restaurados (p=0,01) e dentes ausentes (p=0,02)
Castro, Machado, Gabardo 2015	242 indivíduos usuários de crack 33,9 anos	18 anos ou mais, usuários de crack, fumantes ou não de tabaco, internados (reabilitação uso da droga), não realizaram tratamento periodontal nos últimos 3 meses (dez./13 à abr./15)	11,1 anos média: 19,6 pedras/dia (1 pedra = 0,25g)	Condição periodontal – critérios da *American Academy of Periodontology* (AAP, 2000)	duas instituições de tratamento para dependência química não informado	Regressão de Poisson com estimativa de variância robusta	avaliar o impacto da periodontite na qualidade de vida dos usuários de crack	impacto na qualidade de vida foi relacionado com a periodontite (p<0,00), sensação de gosto metálico na boca (p=0,00) e sensação de dentes amolecidos (p=0,04)
Teixeira Neto, Cangussu 2017	143 usuários de cocaína e/ou crack 33,2 anos	uso da cocaína e/ou crack ao menos uma vez/mês durante o último ano, apto a responder o questionário de forma escrita ou oral. Todos os participantes firmaram seu consentimento em participar do projeto, mas não assinaram o TCLE	12,9 anos (74,7% utilizam dois ou mais dias por semana)	índice CPOD e condição periodontal - critérios baseados nos parâmetros adotados pelo Ministério da Saúde (SB Brasil, 2001). Disfunção temporomandibular – questionário baseado na *American Academy of Orofacial Pain*	Rua, associação de moradores, sede de um projeto social e no serviço de redução de danos da Faculdade de Medicina da Universidade Federal da Bahia não se aplica	Teste Qui-Quadrado de Mantel-Haenszel, Regressão logística	descrever as condições de saúde bucal da população usuária de cocaína e/ou crack de 4 áreas do município de Salvador/BA	altos índices de cárie (CPOD=12,8, componente perdido + cariado - 82%) e doença periodontal (bolsas periodontais 66%). Disfunção temporomandibular (DTM) (74,13%) – associação com sexo (p=0,03), idade (p=0,02), alta frequência de álcool (p=0,01) e tabaco (p<0,00)

Autores Ano publicação	Número de participantes Idade média	Critérios de inclusão	Tempo Quantidade uso de crack	Critérios de diagnóstico das condições bucais	Local coleta de dados Tempo internamento	Testes estatísticos	Objetivos	Resultados/ Conclusões
Fonseca, Carvalho, Leão 2014	94 usuários de crack 33,4 anos	usuário de crack (no mínimo um ano), estar em acompanhamento nos centros de referência (CAPS-AD) do Município, acima de 18 anos e aceitar participar voluntariamente da pesquisa assinando o TCLE (jan./2012 a jan./2013)	9,9 anos não informado	índice CPOD e condição periodontal - códigos preconizados SB Brasil - 2010. Lesão oral – critérios OMS. Saliva total - método de coleta de saliva não estimulada (hipossalivação - nível menor 0,1ml/minuto). Xerostomia – autorelato	6 Centros de Atenção Psicossocial Álcool e Drogas (CAPS ad) não se aplica	Kolmogorov-Smirnov, Shapiro-Wilk e Mann Whitney	caracterizar o perfil sociodemográfico, avaliar a saúde bucal e a soro prevalência dos vírus HIV, HCV e HBV em usuários de crack	homens, jovens, solteiros, baixa escolaridade e nível socioeconômico. Altos índices de cárie e doença periodontal. Aumento do risco de desenvolver lesões potencialmente malignas. Associação xerostomia e tempo uso crack (p=0,00). Risco aumentado para infecções

CPOD – número de dentes permanentes cariados, perdidos por cárie e restaurados; CAPS -AD - Centro de Atenção Psicossocial Álcool e outras Drogas

Todos os artigos incluídos nesta revisão sistemática, de acordo com os critérios de inclusão, foram desenvolvidos no Brasil, apesar dos relatórios mundiais mais recentes apontarem o aumento do consumo desta droga também em outros países da América do Sul e do Norte, além de países da África e Ásia.[36,1] Quanto a distribuição destes estudos destaca-se que 44% foi desenvolvido na Região Sul e 56% no Nordeste. Esta distribuição pode ser explicada pelos resultados da Pesquisa Nacional sobre o Uso de Crack, que estima (números absolutos) que 148.704 pessoas usaram regularmente crack e/ou similares (merla, pasta base, oxi) nos últimos seis meses no Nordeste e 37.781 na região Sul. Apesar do número de usuários no Sul ser alto, ele não é tão expressivo quanto no Nordeste, porém ele representa 52% do consumo de drogas ilícitas nesta região (com exceção da maconha) e quase 91% do consumo desta droga ocorre em locais públicos.[37]

A população na maioria dos estudos (90,5%) era predominantemente masculina, e a amostra em cinco estudos consistia exclusivamente de homens. Esse resultado enfatiza a necessidade de mais pesquisas envolvendo mulheres que também consomem esses medicamentos e podem estar grávidas, levando a efeitos adversos e irreversíveis na mãe e no recém-nascido. Alguns estudos encontraram uma correlação do uso de crack na gravidez com hipertensão, pré-eclâmpsia, descolamento de placenta, malformações congênitas, baixo peso ao nascer, parto prematuro e morte fetal, além de convulsões, microcefalia e distúrbios neurológicos no recém-nascido.[38,39]

Nossos resultados indicaram que o crack foi utilizado predominantemente por adultos jovens, com média de idade de 30,7 anos. Esses dados estão em consonância com outros estudos, assim como com relatórios nacionais e internacionais, que revelam um maior uso desses medicamentos entre os jovens adultos,[40,41,42,43,1] e evidenciam a necessidade de políticas públicas voltadas a esse grupo, que inicia o uso de drogas em idade precoce, afetando negativamente todos os aspectos de suas vidas.

Alterações salivares

Um estudo incluído nesta revisão não encontrou mudanças significativas no fluxo salivar e capacidade tampão. No entanto, o pH salivar foi significativamente menor nos usuários de crack do que nos não usuários. No entanto, essa redução não

é capaz de modificar o ambiente bucal, favorecendo o desenvolvimento de cárie.[44]

Experiência de cárie dentária

Um estudo relatou que o uso de crack não foi fortemente associado com o CPOD, mas foi significativamente correlacionado com a cárie. Além disso, os usuários de crack apresentaram menores taxas de dentes restaurados ou ausentes, salientando o acesso limitado da população aos serviços de saúde bucal.[45]

Doença periodontal

Dois estudos avaliaram o uso de crack e DP e nesta revisão. Em um estudo, observou-se que usuários de crac/ cocaína aumentaram a profundidade de sondagem, mas não apresentaram associação com DP severa.[46] O outro estudo mostra a associação de crack com DP e um maior índice de placa dental visível em usuários de crack, quando comparado ao grupo que não usou o medicamento.[47]

As diferenças encontradas no desenvolvimento dos dois estudos afetam os resultados em relação à doença periodontal, pois cada estudo possui uma particularidade que pode interferir no resultado final, como o tempo médio de uso dos medicamentos (5 e 14 anos, respectivamente), o tipo de drogas associadas ao crack e a hospitalização ou acompanhamento no CAPS-DA. O tempo de internação no momento da coleta de dados também interfere nos resultados, pois nos casos em que os dados foram coletados nos primeiros dias de internação, as condições bucais não foram afetadas pela rotina hospitalar (incluindo procedimentos de higiene bucal) e pelos medicamentos prescritos no período de desintoxicação, o que pode alterar as condições bucais. Além disso, os resultados podem diferir entre as populações do estudo, dependendo dos critérios utilizados para o diagnóstico de DP.

Achados estomatológicos

Nesta revisão, no estudo em que foi analisada a presença de lesões da mucosa bucal em usuários de crack, foi estabelecido que a prevalência foi significativamente maior (25%) nessa população em comparação aos não usuários (9,9%), com associação significativa entre uso de crack/cocaína e lesões da mucosa bucal. As lesões mais prevalentes foram úlcera traumática, queilite actínica e fístulas (relacionadas à retenção de raízes dentárias), localizadas principalmente na gengiva,

lábios, assoalho da boca e palato duro.[48]

Na tese desenvolvida com 94 usuários de crack no CAPS-AD, oito (8,5%) apresentaram lesões na mucosa bucal, das quais cinco eram potencialmente malignas (quatro identificadas como leucoplasia e uma identificada como eritroplasia), sugerindo que esses sujeitos possuem maior risco de desenvolver lesões potencialmente malignas.[49]

No entanto, esses estudos utilizaram diferentes parâmetros, que poderiam afetar os resultados, incluindo o número de participantes (40 usuários no primeiro estudo e 94 usuários na tese) e a duração média do uso de drogas (14 anos no primeiro estudo e 9,9 anos na tese).

Disfunção temporomandibular (DTM)

A tese realizada com 143 usuários de cocaína e/ou crack indica que 74,13% da amostra apresentavam pelo menos 5 sinais e sintomas de DTM. No entanto, houve associação significativa entre o uso de drogas e o desenvolvimento de DTM em homens com mais de 35 anos que consomem bebidas alcoólicas e tabaco duas ou mais vezes por semana, sugerindo que, a longo prazo, o uso de drogas afeta negativamente o sistema estomatognático, causando danos à articulação temporomandibular. Até o momento, apenas esta tese avaliou a correlação entre uso de crack e DTM. Portanto, estudos adicionais e avaliações clínicas mais detalhadas são necessárias para confirmar esses resultados. Além disso, outros fatores além do uso de drogas podem causar mudanças na etiologia da DTM.[50]

Qualidade de vida

Nesta revisão, dois estudos avaliaram a relação entre uso de crack, saúde bucal e qualidade de vida. Um estudo indicou que a qualidade de vida de usuários de crack e outras drogas ilícitas foi pior do que a de não usuários. Além disso, neste estudo, houve associação significativa do uso de drogas com limitação funcional e desconforto psicológico, e 96% e 53% dos participantes do estudo apresentaram cárie dentária e DP, respectivamente.[51]

O censo realizado em dois centros de reabilitação indicou que a DP estava associada à baixa qualidade de vida, sendo as áreas mais afetadas o desconforto psicológico (71,0%) e a incapacidade psicológica (61,6%), demonstrando que o

estado de saúde bucal pode afetar o estado psicológico dos usuários de crack.[52]

No entanto, os resultados da literatura não concordam com os presentes achados. Narvaez *et al*.[53] indicaram que o uso de crack/cocaína afetou fortemente a qualidade de vida e a saúde física e emocional dos usuários. Outro estudo com jovens usuários de crack e outras drogas ilícitas indicou que o uso de drogas reduz a qualidade de vida, mesmo no início do vício.[54] No entanto, vale ressaltar que outros fatores afetam a qualidade de vida dessa população.

Outro fator crítico a considerar no desenvolvimento de estudos sobre o uso de drogas é a distinção entre uso e dependência. A dependência é complexa e influenciada por diversos fatores, incluindo o individual (personalidade e biológico), substâncias psicoativas (diferentes propriedades farmacológicas) e contexto sociocultural (interações entre sujeitos e drogas). O vício também é ditado por fatores sociais, biológicos e psicológicos. Outros fatores que contribuem incluem acesso, custo, forma de apresentação e forma de uso de drogas psicoativas. A esse respeito, drogas com ação rápida e efeito forte, assim como drogas que são rapidamente eliminadas, geralmente têm um potencial maior de dependência. Portanto, os usuários tornam-se dependentes quando perdem o controle do uso de drogas e precisam usá-los com mais frequência e de forma impulsiva.[55] No entanto, a maioria dos estudos não distingue usuários e adictos, e esses dois termos costumam ser usados como sinônimos. A Lei 11.343 / 2006, que estabeleceu o Sistema Nacional de Políticas Públicas sobre Drogas, aponta o mesmo tratamento para usuários e dependentes de drogas.[56] Portanto, é essencial identificar diferenças nos padrões de uso de drogas para a interpretação correta dos resultados da pesquisa.[57]

Além da ação do próprio medicamento na saúde bucal dos usuários, vários estudos apontam para a negligência desse grupo em termos de autocuidado, como conseqüência do uso de drogas, aliado ao acesso limitado aos serviços de saúde bucal; além das questões socioeconômicas e culturais que envolvem essa população.[8,41,20,6,58]

Embora todos os estudos analisados tenham sido classificados como de alta qualidade segundo o checklist modificado do STROBE, outras características relevantes foram analisadas nesses estudos, incluindo o delineamento transversal de todos os estudos, impedindo o estabelecimento de causalidade; amostragem por conveniência (todos os estudos) foi aplicada porque os usuários de drogas foram

hospitalizados ou estavam sendo acompanhados em clínicas de reabilitação, levando a uma melhora na saúde; e desenvolvimento de todos os estudos no Brasil, apesar do aumento do consumo de crack em outros países.

As diferenças na metodologia entre os estudos também podem afetar os resultados e devem ser analisadas com cuidado ao interpretar os resultados.

Outros fatores limitantes foram: 1. a maioria dos usuários consumiu dois ou mais medicamentos juntos, ignorando as interações medicamentosas; e 2. impossibilidade de quantificar e qualificar com precisão a composição e a dose de cada droga. Por estas razões, estabelecer correlações entre um medicamento específico e a saúde bucal é um desafio.

CONCLUSÃO

Os resultados desta revisão sistemática sugerem associação entre o uso de crack e declínio do estado de saúde bucal. No entanto, as evidências científicas atuais são insuficientes para sustentar essa correlação quando comparadas a não usuários.

Os usuários de crack são estigmatizados pela população em geral, incluindo profissionais de saúde, e são considerados responsáveis por sua condição.

Portanto, estudos adicionais com diferentes desenhos e metodologias padronizados são necessários para minimizar essas limitações e produzir resultados mais confiáveis.

Além disso, os presentes resultados contribuem para a prática clínica e a tomada de decisão sobre estratégias adequadas de atenção à saúde para essa população.

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ARTIGO 1 - VERSÃO EM INGLÊS

Journal: Brazilian Oral Research

ASSOCIATION BETWEEN THE USE OF CRACK COCAINE AND ORAL HEALTH: A SYSTEMATIC REVIEW

ABSTRACT

The objective of this study was to determine the association between the use of crack cocaine and oral health by systematically reviewing the literature. The review was performed according to the preferred reporting items for systematic reviews and meta-analyses (PRISMA) recommendation to assess the correlation between the use of crack cocaine and oral health. Observational studies published from June 2008 to June 2018 were searched in the PubMed databases, Virtual Health Library, Scielo, Cochrane, as well as in theses and dissertations databases from universities. The descriptors (in English, Portuguese, and Spanish) were: “crack cocaine” OR “cocaine smoking” OR “crack users” OR “cocaine crack” AND “oral health” AND “salud bucal” AND “saúde bucal.” A total of 1,521 studies were identified. After reading the titles and removing duplicates, 30 studies were eligible for inclusion, of which 21 were excluded after reading the full text because they did not comply with the objective of this review. Therefore, nine studies were included in the review. According to the results, changes in oral pH, and an association between the use of crack cocaine and dental caries as well as periodontal disease were reported, in addition to a higher prevalence of oral mucosal lesions in crack users, and worsening of the quality of life of those users when compared to non-users. This systematic review suggests a correlation between the use of crack cocaine and worsening of oral health. Nonetheless, there was insufficient scientific evidence to prove this relationship, indicating the need for additional studies to confirm this hypothesis. Notwithstanding, the present results might aid in choosing appropriate oral health strategies for crack users.

Keywords: Crack cocaine; Oral Health; Oral Diseases; Systematic Review.

INTRODUCTION

The World Drug Report (2018) indicated that 18.2 million people aged between 15 and 64 years used cocaine in 2016, and highlighted that the use of this drug increased by approximately 7% when compared to 2015. This increase gradually occurred between 2006 and 2016, especially in the Americas, Africa, and Asia, and the use of cocaine base paste increased in several South American countries.[1]

Crack cocaine is obtained from a mixture of cocaine paste, sodium bicarbonate, and water, and is often marketed as smoked stone.[2,3] It is a potent stimulant of the central nervous system, with a high risk of addiction.[4]

Studies show that drug abuse is a major cause of various physical and mental problems, and that both licit and illicit drugs damage oral tissues.[5,6,7,8] Therefore, dental surgeons and other health professionals need to acknowledge the consequences of drug abuse in order to develop effective and safe oral treatments for this population.[9,10]

Moreover, it is of utmost importance that health professionals attending to drug users consider the impact of these substances on the quality of life of these individuals, in order to facilitate the reduction of the associated risks, and ensure that more comprehensive care is provided to these individuals.[11,12]

With respect to crack cocaine, in particular, there is a gap in the literature on the association between the use of this drug and oral health. Hence, the objective of this study was to evaluate this association by systematically reviewing the literature to obtain the best quality scientific evidence. This information can support the development of intersectoral public policies to promote the reintegration of this population into society and improve their quality of life.

METHODOLOGY

This review was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) recommendations.[13] The study protocol was recorded in the International Prospective Register of Systematic Reviews (PROSPERO) under Protocol No. CRD42018108065. The research question was: “Is there an association between crack cocaine use and oral health?”

The articles were searched in the PubMed databases, Virtual Health Library, Scielo, and Cochrane. Theses and dissertations databases from universities with relevant publications on this topic were also searched. The descriptors (in English, Portuguese, and Spanish) were selected from the Medical Subject Headings (MeSH) and the Health Sciences Descriptors of the Virtual Health Library (BVS). The following keywords were searched: “crack cocaine” OR “cocaine smoking” OR “crack users” OR “cocaine crack”, AND “oral health” AND “salud bucal” AND “saúde bucal”.

The elaboration of the question was based on the PECO anagram, which takes into account the population, exposure, and comparison of results.

P = adult population

E = use of crack

C = non-users of crack or lack of control

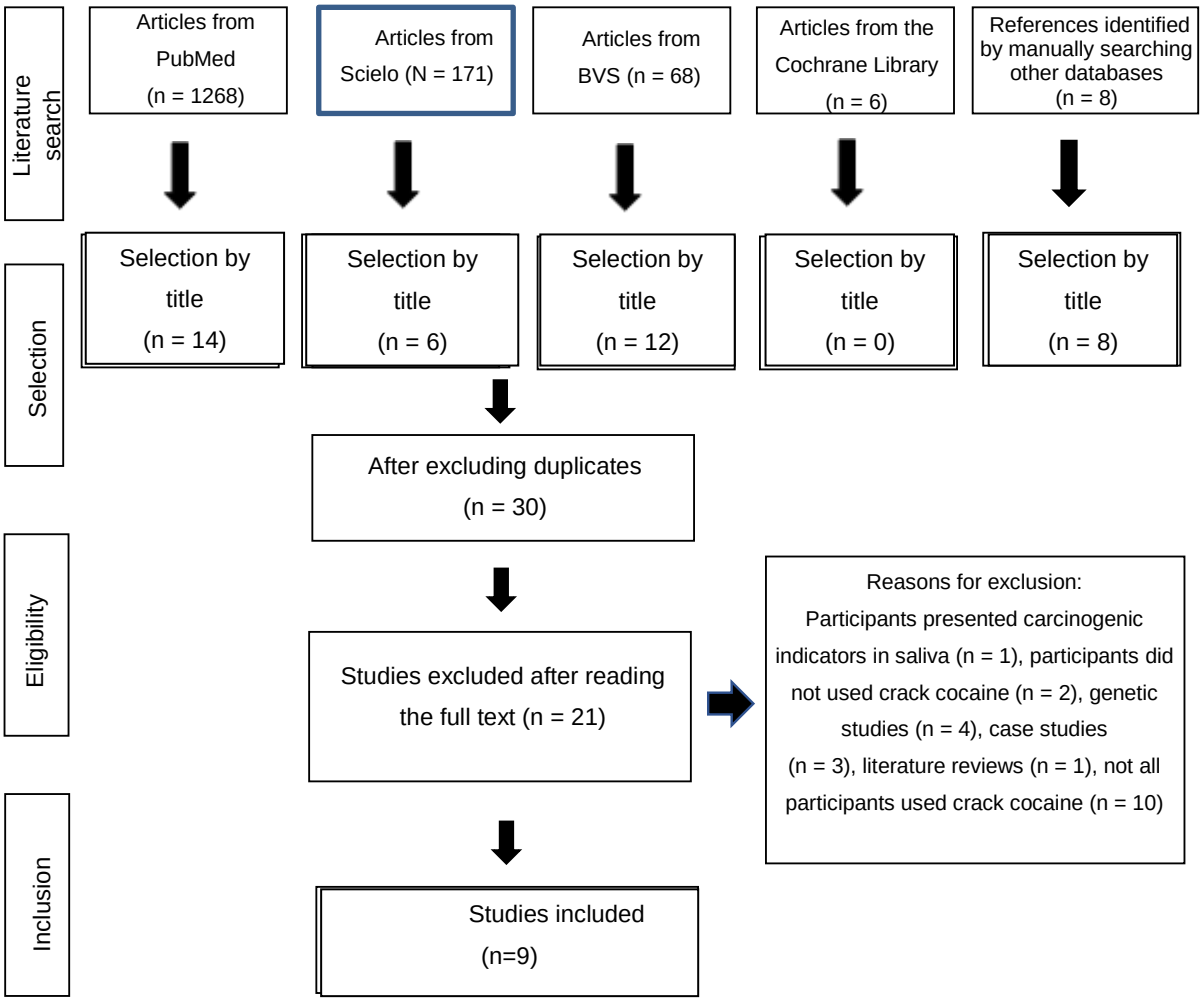
O = oral health.

Inclusion criteria

The inclusion criteria were full text in Portuguese, English and Spanish; published between June 2008 and June 2018, characterized as observational studies, in which all participants used crack, and aimed to evaluate the association between crack use and oral health.

Study selection

The articles were selected by two independent researchers and a third researcher was consulted in case of disagreement. A total of 1,521 articles were identified. After reading the titles, 40 studies were eligible for inclusion in the review, of which 10 were excluded because they were duplicated. Thirty studies were read in full, of which 21 were excluded. One study was excluded because the participants had carcinogenic indicators in saliva,[14] two because the participants did not use crack,[15,16] three because they were case studies,[17,18,19] one because it was a literature review,[20] four because they were focused the genetic aspects,[21,22,23,24] and ten because not all participants used crack[25,26,27,28,29,30,31,32,33,34]. Therefore, nine studies were included in this review.



Flowchart 1. Study selection flowchart (according to PRISMA).

After the final selection, the methodological quality of the 9 studies was assessed using an instrument for critical reading and evaluation of cross-sectional epidemiologic studies - Strengthening the Reporting of Observational Studies in Epidemiology - Modified STROBE.[35]

RESULTS AND DISCUSSION

The description of the main results is illustrated in Table 1, which includes the authors of the article, year of publication, number and mean age of the participants, duration of crack cocaine use, amount of crack cocaine used, criteria for diagnosing oral problems, place of data collection, length of hospitalization, as well as statistical tests, objectives, main results, and conclusions.

Of the nine studies included in this review, six were research articles, and three were theses or dissertations (grey literature). All studies were conducted in Brazil (four in the south and five in the northeast) using a cross-sectional design. The mean number of crack users was 96, ranging from 54 to 242, the mean age of the participants was 30.7 years, and 90.5% of users were men. Regarding the quality evaluation of the studies included in this systematic review, all were classified as high quality.

These studies examined the following characteristics: salivary profile (one study), dental caries (one study), periodontal disease (two studies), oral findings (two studies), temporomandibular dysfunction (one study), and an association between oral health and quality of life (two studies).

Table 1. Characteristics of the studies on the relationship between crack cocaine use and oral health included in this systematic review, 2008 to 2018.

Authors Year of publication	Sample size Mean age	Inclusion criteria	Duration of crack cocaine use Amount of drug used	Criteria for diagnosing oral problems	Place of data collection Length of hospitalization	Statistical tests	Objectives	Results and conclusions
Woyceichoski, Costa, Araújo, Brancher, Resende, Vieira, et al. 2013	54 crack cocaine users and 40 controls matched by gender and age 29.6 years	Admission to rehabilitation clinics	Not informed	Salivary flow was determined using the Banderas-Tarabay method (hyposalivation, <0.5 mL/min); pH was measured with a digital pH meter; buffer capacity was determined according to the method developed by Ericsson et al.	Rehabilitation clinic Not informed	Kolmogorov-Smirnov test, Levene test, and Student's *t*-test	Measure the rate of stimulated salivary flow, salivary pH, and buffer capacity in crack cocaine users	Oral pH decreased significantly (p=0.00) but did not affect salivary flow and buffer capacity
Antoniazzi, Zanatta, Ardenghi, Feldens 2018	106 crack users and 106 controls matched by gender, age, and use or non-use of tobacco 23.7 years	At least 1 year of crack use, absence of cognitive impairment, hospitalization (for treating drug addiction) between August 2012 and December 2013	5.0 years Average of 24.4 doses per day	DMFT and PD were evaluated according to the WHO criteria (1997). Quality of life was assessed using the Brazilian version of Oral Health Impact Profile (OHIP-14)	Two rehabilitation clinics Mean length of hospitalization: 2.3 months.	Mann-Whitney test, chi-square test, and logistic regression	To investigate the effect of the use of crack cocaine and other illicit drugs on oral health and the quality of life of young adults	Crack cocaine use reduced the quality of life (p<0.00) and was significantly correlated with functional limitation (p=0.00) and psychological discomfort (p<0.00)

Authors Year of publication	Sample size Mean age	Inclusion criteria	Duration of crack use Amount of crack used	Criteria for diagnosing oral problems	Place of data collection Length of hospitalization	Statistical tests	Objectives	Results and conclusions
Antoniazzi, Zanatta, Rösing, Feldens 2016	106 users of crack cocaine and 106 controls matched by gender, age, and use or non-use of tobacco 23.7 years	At least 1 year of crack use, absence of cognitive impairment, hospitalization (for treating drug addiction) between August 2012 and December 2013	5.0 years Average of 24.4 doses per day	PD was assessed using the WHO criteria (1997)	Two rehabilitation centers Mean length of hospitalization: 2.3 months	Logistical and linear regressions	To investigate the relationship between the use of crack cocaine and PD	Dental plaque was significantly more evident in crack users (p=0.02); significant association between drug use and PD (p=0.00); significant correlation of PD with smoking (p=0.01), and moderate and heavy use of alcohol (p=0.04)
Cury, Araújo, Oliveira, Santos 2018	40 crack cocaine users and 121 controls 33 years	Men older than 18 years enrolled from June 2013 to June 2014	14 years of use of crack cocaine Not informed	Oral mucosa was examined using the WHO criteria (1997)	Center for Psychosocial Care Alcohol and Drugs (Centro de Atenção Psicossocial Álcool e Drogas [CAPS-AD]) Not applicable	Chi-square test, Fisher's exact test, and logistic regression	To evaluate the prevalence of oral mucosal lesions in crack cocaine users (men)	The prevalence of lesions was significantly associated with crack cocaine use (p=0.03)
Cury, Oliveira, Santos 2017	40 crack cocaine users and 120 controls 33 years	Men older than 19 years with good general health and at least six teeth in the mouth (June 2013 to June 2014)	14 years of use of crack cocaine Not informed	PD was evaluated using the criteria established by Eke et al. (2012). Bleeding was assessed according to the criteria established by Lang and Tonetti (2003)	CAPS-AD Not applicable	Student's *t*-test, chi-square test, and logistic regression	To determine the prevalence of PD between crack cocaine male users and non-users	Severe PD was positively associated with age (p=0.00) and the plaque index (p=0.00) but not with crack cocaine use

Authors Year of publication	Sample size Mean age	Inclusion criteria	Duration of crack use Amount of crack used	Criteria for diagnosing oral problems	Place of data collection Length of hospitalization	Statistical tests	Objectives	Results and conclusions
Cury, Oliveira, Andrade, Freitas, Santos 2017	40 crack cocaine users and 120 controls 33 years	Men older than 19 years with good general health and at least six teeth in the mouth (June 2013 to June 2014)	14 years of use of crack cocaine Not informed	DMFT was measured using the WHO criteria (1997)	CAPS-AD Not applicable	Chi-square test and logistic regression	To evaluate the link between the use of crack cocaine and oral health (DMFT) in men	Crack cocaine use was positively correlated with caries (p=0.00) but negatively correlated with the number of decayed teeth (p=0.01) and number of missing teeth (p=0.02)
Castro, Machado, Gabardo 2015	242 crack cocaine users 33.9 years	Subjects aged 18 years or older, crack users, tobacco smokers or non-smokers, hospitalized (for treatment of drug addiction), and subjects who did not undergo periodontal treatment in the last 3 months (December 2013 to April 2015)	11.1 years Average of 19.6 doses per day (one dose [“crystal”] corresponds to 0.25 g)	PD was evaluated using the criteria of the American Academy of Periodontology (AAP, 2000)	Two rehabilitation centers Not informed	Poisson regression with robust variance estimation	To evaluate the impact of PD on the quality of life of crack users	The quality of life was significantly correlated with PD (p<0.00), the sensation of metallic taste in the mouth (p=0.00), and the sensation of soft teeth (p=0.04)
Teixeira Neto, Cangussu 2017	143 crack cocaine users 33.2 years	Use of crack cocaine at least once a month in the past year, able to answer the questionnaire in written or oral form. All participants agreed to participate in the study but did not sign the informed consent form.	12.9 years (74.7% used crack at least 2 days per week)	DMFT and PD were evaluated according to the criteria defined by the Ministry of Health (SB Brazil, 2001). TMD was diagnosed using a questionnaire developed by the American Academy of Orofacial Pain	Streets, local residents’ association, headquarters of a social project, and the damage reduction service of the School of Medicine of the Federal University of Bahia Not applicable	Chi-square test of Mantel-Haenszel, logistic regression	To describe the oral health status of subjects using crack cocaine in four neighborhoods of Salvador, Bahia, Brazil	High rates of caries (DMFT, 12.8; decayed and missing teeth, 82%) and PD (periodontal pockets, 66%). TMD (74.13%) was significantly associated with gender (p=0.03), age (p=0.02), use of alcohol (p=0.01), and use of tobacco (p<0.00)

Authors Year of publication	Sample size Mean age	Inclusion criteria	Duration of crack use Amount of crack used	Criteria for diagnosing oral problems	Place of data collection Length of hospitalization	Statistical tests	Objectives	Results and conclusions
Fonseca, Carvalho, León 2014	94 crack cocaine users 33.4 years	Subjects using crack cocaine for at least 1 year, under follow-up in referral centers (CAPS-AD) of the municipality, older than 18 years, and who agreed to voluntarily participate in the study by signing the informed consent form (January 2012 to January 2013)	9.9 years Not informed	DMFT and PD were evaluated according to the criteria established by the Ministry of Health (SB Brazil, 2010). Oral mucosal lesions were diagnosed using the WHO criteria. Unstimulated saliva was collected (hyposalivation: <0.1 mL/min). Xerostomia was self-reported	Six CAPS-AD Not applicable	Kolmogorov-Smirnov test, Shapiro-Wilk test, and Mann-Whitney test	To determine the sociodemographic profile, oral health status, and the seroprevalence of HIV, HCV, and HBV viruses in crack cocaine users	Single young men with low education and low socioeconomic status. High rates of caries and PD. Increased risk of malignant oral lesions. Significant association between xerostomia and duration of crack cocaine use (p=0.00). The risk of infections was higher among crack users

DMFT, number of decayed, missing, and filled permanent teeth; PD, periodontal disease; TMD, temporomandibular dysfunction. CAPS -AD, Center for Psychosocial and Drug Attention.

All studies included in this systematic review according to the inclusion criteria were developed in Brazil, although the consumption of crack cocaine increased in other South and North American, African, and Asian countries.[36,1] Regarding the distribution of studies shows that 44% were developed in the South region and 56% in the Northeast. This version can be explained by the results of the National Survey on Crack Use, which estimates (absolute numbers) that 148,700 people regularly and / or similar (merla, mass base, oxy) in the last six months in the Northeast and 37,781 in the region Although the number of users in the South is so high, it is not as significant as in the Northeast, but it represents 52% of illicit drug use in the region (with the exception of marijuana) and almost 91% of drug use occur in public places.[37]

The population in most studies (90.5%) was predominantly men, and the sample in five studies was composed exclusively of men. This result emphasizes the need for more research involving women, who also consume these drugs and are usually pregnant, leading to adverse and irreversible effects on the mother and newborn. Some studies found a correlation of the use of crack in pregnancy with hypertension, preeclampsia, placental abruption, congenital malformations, low birth weight, premature delivery, and fetal death, in addition to convulsions, microcephaly, and neurological disorders in the newborn.[38,39]

The present results indicated that crack cocaine was used predominantly by young adults, with a mean age of 30.7 years. These data are in line with other studies as well as national and international reports, which reveal a higher use of these drugs among young adults,[40,41,42,43,1] and highlight the need for public policies aimed at this group, which initiates drug use at an early age, adversely affecting all aspects of their lives.

Salivary changes

One study included in this review found no significant changes in salivary flow and buffer capacity. Nonetheless, salivary pH was significantly lower in crack cocaine users than non-users. Notwithstanding, this reduction is not able to modify the buccal environment, favoring the development of caries.[44]

Dental caries experience

One study reported that crack use was not strongly associated with the number

of decayed, missing and filled permanent teeth but was significantly correlated with caries. In addition, crack users had lower rates of restored teeth or lack of teeth, highlighting the limited access of this population to oral health services.[45]

Periodontal disease (PD)

Two studies evaluated the use of crack and PD and in this review. In one study, crack / cocaine users were found to increase probing depth but no association with severe PD.[46] The other study shows the association of crack with PD and a higher index of dental plaque visible in crack users , when compared to the group that did not use the drug.[47]

The differences found in the development of the two studies affect the results in relation to the periodontal disease, since each study has a particularity that can interfere in the final result, such as the average time of use of the drugs (5 and 14 years, respectively), the type of drugs associated with crack and hospitalization or follow-up in CAPS- AD. The time of hospitalization at the time of data collection also interferes with the results, because in cases where the data were collected during the first days of hospitalization, oral conditions were not affected by the hospital routine (including oral hygiene procedures) and the prescribed medications in the detoxification period, which may change the oral conditions. In addition, the results may differ between the study populations, depending on the criteria used for the diagnosis of PD.

Stomatological findings

In this review, in the study in which the presence of oral mucosal lesions in crack cocaine users was analyzed, it was established that the prevalence was significantly higher (25%) in this population compared to non-users (9.9%), with a significant association between crack / cocaine use and oral mucosa lesions. The most prevalent lesions were traumatic ulcer, actinic cheilitis, and fistulas (related to tooth root retention), and were mainly located in the gingiva, lips, floor of the mouth, and hard palate.[48]

In the thesis developed with 94 crack users in CAPS-AD, eight (8.5%) presented lesions in the buccal mucosa, of which five were potentially malignant (four identified as leukoplakia and one identified as erythroplasia), suggesting that these

subjects were at increased risk to develop potentially malignant lesions.[49]

Nonetheless, these studies used different parameters, which could affect the results, including the number of participants (40 users in the first study and 94 users in the thesis) and the mean duration of drug use (14 years in the first study and 9.9 years in the thesis).

Temporomandibular dysfunction (TMD)

The thesis carried out with 143 users of cocaine and / or crack indicates that 74.13% of the sample had at least 5 signs and symptoms of TMD. However, there was a significant association between drug use and the development of TMD in men over 35 years of age who consume alcoholic beverages and tobacco two or more times per week, suggesting that, in the long term, drug use negatively affects the system stomatognathic, causing damage to the temporomandibular joint. To date, only this thesis assessed the correlation between crack cocaine use and TMD. Therefore, additional studies and more detailed clinical evaluations are necessary to confirm these results. In addition, other factors other than drug use may cause changes in the etiology of TMD.[50]

Quality of life

In this review, two studies assessed the connection between crack cocaine use, oral health, and quality of life. One study indicated that the quality of life of users of crack cocaine and other illicit drugs was worse than that of non-users. Furthermore, in this study, there was a significant association of drug use with functional limitation and psychological discomfort, and 96% and 53% of the study participants presented dental caries and PD, respectively.[51]

The census carried out in two rehabilitation centers indicated that PD was associated with poor quality of life, with the most affected areas being psychological discomfort (71.0%) and psychological incapacity (61.6%), demonstrating that the state of oral health can affect the psychological state of crack users.[52]

Nonetheless, the literature results do not agree with the present findings. Narvaez et al.[53] indicated that crack/cocaine use strongly affected the quality of life and physical as well as emotional health of users. Another study with young users of crack cocaine and other illicit drugs indicated that drug use reduced the quality of life,

even at the onset of addiction.[54] However, it is worth highlighting that other factors affect the quality of life of this population.

Another critical factor to consider in developing studies on drug use is the distinction between use and dependence. Dependence is complex and influenced by several factors, including the individual (personality and biological), psychoactive substances (different pharmacological properties) and sociocultural context (interactions between subjects and drugs). Addiction is also dictated by social, biological, and psychological factors. Other contributing factors include access, cost, form of presentation and form of use of psychoactive drugs. In this regard, drugs with rapid action and strong effect, as well as drugs that are rapidly eliminated, generally have a greater potential for dependence. Therefore, users become dependent when they lose control of drug use and need to use them more frequently and impulsively.[55] However, most studies do not distinguish between users and addicts, and these two terms are often used as synonyms. Law 11,343/2006, which established the National System of Public Policy on Drugs, points out the same treatment for users and drug addicts.[56] It is therefore essential to identify differences in drug use patterns for the correct interpretation of the research results.[57]

In addition to the action of the drug itself on users' oral health, several studies point to the neglect of this group in terms of self-care, as a consequence of drug use, coupled with limited access to oral health services; besides the socioeconomic and cultural issues that surround this population.[8,41,20,6,58]

Although all the studies analyzed were classified as high quality according to the modified STROBE checklist, other relevant characteristics were analyzed in these studies, including the cross-sectional delineation of all the studies, preventing the establishment of causality; convenience sampling (all studies) was applied because drug users were hospitalized or were being followed up at rehabilitation clinics, leading to improved health; and development of all studies in Brazil, despite the increase in crack consumption in other countries.

The differences in methodology between the studies may also affect outcomes, and should be analyzed carefully when interpreting the results.

Other limiting factors were 1. most users consumed two or more drugs together, ignoring drug interactions; and 2. impossibility of accurately quantifying and qualifying the composition and dose of each drug. For these reasons, establishing correlations

between a specific drug and oral health is challenging.

CONCLUSION

The results of this systematic review suggest an association between crack use and decreased oral health status. However, the current scientific evidence is insufficient to support this correlation when compared to non-users.

Crack users are stigmatized by the general population, including health professionals, and are considered responsible for their condition.

Therefore, additional studies with different standardized designs and methodologies are needed to minimize these limitations and produce more reliable results.

Moreover, the present results contribute to clinical practice and decision-making regarding appropriate health care strategies for this population.

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ARTIGO 2 - VERSÃO EM INGLÊS

Journal of Dental Research

ORAL HEALTH OF CRACK USERS IN BRAZIL: A MIXED METHODS STUDY

ABSTRACT

Crack is a derivative of cocaine paste mainly consumed as smoked stones. Studies show a harmful relationship between drug use and oral health. Therefore, this study aims to describe the determinants and perceptions of oral health among crack users in Brazil. A mixed methods approach was used to integrate quantitative and qualitative data analyses and interpretations. The quantitative method, used a cross-sectional study based on primary data from the Brazilian National Survey on Crack Use. The sample was 7381 users of crack and/or similar drugs (base paste, oxy, merla). The variables included sociodemographic factors, drug use, health status, access to health services and events involving the criminal justice system. The outcomes were self-perception of oral health and self-reporting of problems affecting the mouth, teeth and gingiva. The qualitative method used a focus group and content analysis to collect and analyze data, using as theoretical reference the Ottawa Charter for Health Promotion. The intentional sample consisted of 12 individuals from a drug recovery clinic in southern Brazil. Lower self-perception of oral health and higher prevalence of problems affecting the mouth, teeth, and gingiva were found in users who had a lower level of education, used drugs daily, had worse self-perception of physical health, did not receive health care and regularly used alcohol and/or tobacco. The results showed a relationship between drug use and decline in oral health and emphasized the vulnerabilities and inequalities suffered by users and the lack of health services directed toward them. This study highlights the need to implement more equitable public policies for crack users. Oral health services should be emphasized as a gateway to the health system. Access to and maintenance of treatments should be increased, thereby improving this population’s quality of life with regard to their individual needs and sociocultural particularities.

Keywords: crack cocaine, crack users, oral health, vulnerability, inequalities, public policies, oral health services.

INTRODUCTION

The World Drug Report estimated that 275 million people used drugs in 2016 (15-64 years), among which 56 million suffered from drug-related disorders (United Nations Office on Drugs and Crimes 2018). Epidemiological surveys among Brazilians show that a third of illicit drug users (except marijuana users) consume crack and/or similar drugs (coca paste, oxy and merla) (Brazil 2014). In addition, evidence points to easy access to drugs, especially among young people (Brazil 2009).

Crack, a derivative of cocaine paste mainly consumed as smoked stones, was identified in the 1980s in the United States, particularly in contexts of social vulnerability (Smart 1991). It is unclear when crack began to be marketed in Brazil, but the available literature indicates that it may have been in the early 1990s (Nappo et al. 1996).

The relationship between harmful use of drugs and poor oral health is shown in the literature. Typically, crack is used via a pipe, which can be made of various materials, most commonly aluminium cans. Constant contact with heated aluminium causes skin damage, including blisters and wounds on the tongue, lips, face, and fingers, in addition to heavy metal toxicity (Pechansky et al. 2007). Sharing a pipe can increase the risk of infectious disease transmission through contact with the blood of other users (Aaron et al. 2008). Furthermore, patients who use crack have greater damage to the teeth and more severe periodontal disease than the general population, and less access to treatments (Baghaie et al. 2017; Cury et al. 2017).

Besides having damaging effects on oral and general health, drugs interfere in all aspects of life (social, economic, cultural, environmental and behavioural), adversely affecting users' quality of life.

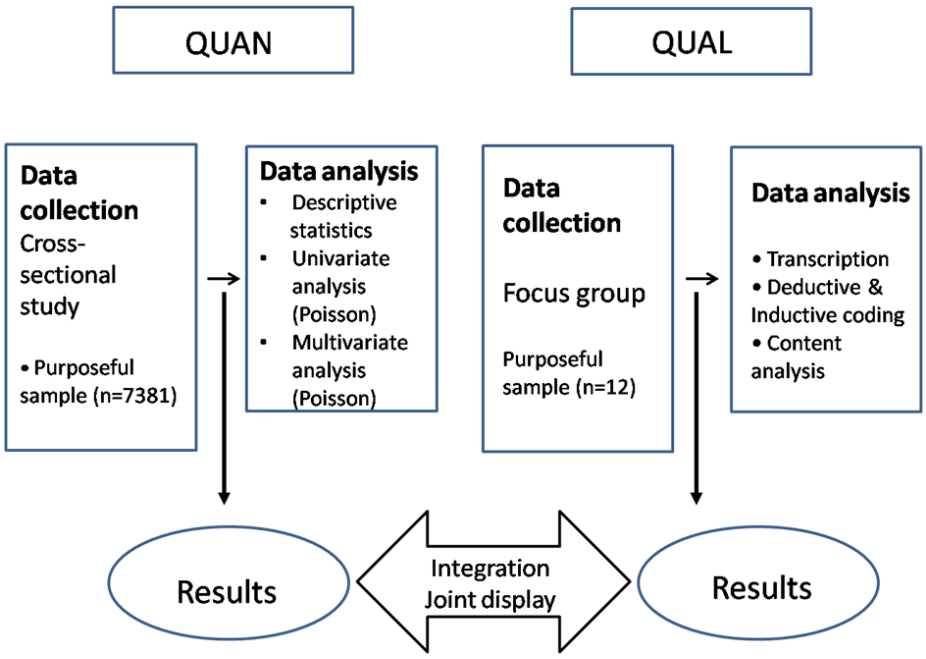
Although some existing studies concern drug use and oral health, few address this issue from the perspective of the users, aiming to understand these individuals' quality of life (Branco et al. 2012; Bastos and Bertoni 2014). Thus, this study aims to describe the determinants and perceptions of oral health among crack users in Brazil, using a mixed method approach that allows a broader view of the problem, with the

goal of comprehending this relationship in greater depth and providing a theoretical basis of impact.

METHODOLOGY

A convergent parallel mixed method (MM) approach was used in this study. Quantitative (QUAN) and qualitative (QUAL) data were collected and analysed separately, and their results were then compared and combined to better understand the perceptions of Brazilian crack users about their oral health (Creswell 2012; Creswell 2010; Creswell and Plano Clark 2011), according to Diagram 1.

Diagram 1 – Convergent design: parallel



Source: by authors

The quantitative component of the study used data from a survey on crack use to understand the profile of crack users in Brazil. The qualitative component was descriptive and adopted the Ottawa Charter for Health Promotion as a theoretical basis (Ottawa Charter, 1986).

The following research questions were identified to direct the study:

RQ1 (MM): What are the determinants and perceptions of oral health among Brazilian crack users?

RQ2 (QUAN): What are the determinants of self-reported oral health among Brazilian crack users?

RQ3 (QUAL): How do Brazilian crack users perceive their oral health?

Ethical approval for this project was obtained from the Ethics Committee of the Escola Nacional de Saúde Pública Sergio Arouca (Ensp/Fiocruz, no. 62/11) and the Research Ethics Committee of the Pontifícia Universidade Católica do Paraná (no. 1.784.023/2016).

Quantitative Component Method

This cross-sectional study was based on primary data from the National Survey on Crack Use, which aimed to trace the profile of users of crack and/or similar drugs (base paste, oxy, merla) in Brazil. Briefly, research was conducted in the 27 state capitals, nine metropolitan regions, and medium/small cities and rural areas in the five regions of the country. A total of 7381 crack or similar drug users were recruited for the study, defined as those who were 18 years or older and used crack or similar drugs at least once a week of the previous six months. A full description of this study was published elsewhere (Bastos and Bertoni 2014).

The Time Location Sampling (TLS) method was used to access users of crack and/or similar drugs. This method was carried out in phases: rapid mapping of the scenes of use; random selection of locations, days of the week, shifts, and schedules; and recruitment via eligibility questionnaire and signing of the Written Informed Consent. The questionnaires for data collection were conducted by a team trained for this purpose (Bastos and Bertoni 2014).

Within 300 questions were extracted the variables of the primary study related to oral health to compose the present study (sociodemographic factors and variables related to drug use, sexual behaviour, health status, access to health services, and events involving the criminal justice system). The outcomes were self-perception of oral health and self-reporting of problems affecting the mouth, teeth and gingiva

(junction of two variables of the questionnaire because both together were the self-reporting problems related with mouth soft and hard tissue).

Data analysis

Data were analyzed in three main steps. First, an exploratory data analysis was conducted to identify the main patterns. Subsequently, some variables were categorized (education, housing, income in the last 30 days and before starting to use crack and/or similar drugs, frequency of use, history with crack, continuous use of crack, use of condoms/barriers in oral sex, and physical health status). Because the focus of interest in this study was the use of crack/other drugs, substance use was categorized and divided into alcohol, tobacco, crack, paste/oxy, and drugs in general.

Second, associations between the dependent and independent variables were verified. Association between categorical variables was performed using Pearson's chi-squared test, and prevalence ratios were calculated with a 95% confidence interval.

Third, a single model was constructed, based on the retained factors in the intermediate models, using Poisson regression with robust variance. The variables that were not significantly associated and did not contribute to this model were eliminated. This analysis used forward regression, the Wald heterogeneity test, and an Omnibus test. Because alcohol and tobacco did not appear in the final model, a test was performed with the two outcomes to verify if there was interaction. The same procedure was performed with pre-crack income and education. As interaction was observed, two new variables were included in the model and the Poisson regression was repeated again until the final model was obtained.

All data were analysed using the Statistical Package for the Social Science (SPSS) version 23, considering the complex sample design and sample weights.

Qualitative Component Method

The qualitative description methodology was adopted to pursue the research objectives (Stewart et al. 2008), using the Ottawa Charter for Health Promotion as a theoretical reference. So the Ottawa Charter for Health Promotion served as the basis

for collecting and analyzing qualitative data, check whether they were related WITH health promotion strategies: build healthy public policy, create supportive environments, strengthen community actions, develop personal skills and reorient health services (Ottawa Charter 1986).

The intentional sample consisted of 12 individuals from a drug recovery clinic in the metropolitan region of curitiba, state of Paraná. This clinic is a full-time hospitalization program coordinated by a multiprofessional team that incorporates therapeutic workshops (music, crafts, gardening, etc.), therapeutic groups, and individual care. Participants were selected through initial contact with the clinic managers, who held a meeting with patients who followed the inclusion criteria (use of crack, whether or not associated with other drugs; age of 18 years or older), a total of 18 people of 25. At the meeting, the researcher explained the research objectives and methodology, and 12 people agreed to participate in the study.

Data were collected from a focal group (Carlini-Coltrini 1996; Tausch and Menold 2016; Bomfim 2009) using the following guiding questions: “How do you define oral health?” “What do you think of your oral health?” “Does drug interaction interfere with your quality of life? If so, how?” The group was led by an independent researcher with experience in collecting data through a focus group and knowledge of chemical dependence. A pilot study at another drug recovery clinic (11 individuals) was carried out to guarantee the clarity and objectivity of the guiding questions.

Content analysis was used to explore the data (Minayo 2013; Minayo 2009). The coding scheme was developed using both deductive codes (based on the Ottawa Charter for Health Promotion) and inductive codes (emerging from participants’ discourse). For this qualitative analysis, the first coding of the transcript was performed using the NVivo software. Subsequently, the codes were rearranged into subcategories and then into categories.

Following the conceptual framework of the study, qualitative data analysis was organized into two main categories, health inequalities and public policies, and subdivided into four subcategories: definition of health/oral disease, relationship between drug use and oral health, access to services, and health professionals.

Transcription was conducted independently by a Brazilian researcher, and the translation was verified by a Canadian researcher with a command of the Portuguese language. To validate the analysis, triangulation was used, in that two other members

of the research team aside from the principal investigator verified the codes, categories, and interpretations.

Integration of Results

After analyzing each set of data according to the strategies described above, the results of the two components were compared and integrated. Common concepts were initially examined in both components. A joint view table was then developed to merge the two types of results by common concepts. The results in the table were contrasted to identify convergence, divergence, and uniqueness. These results were integrated and compared with the joint presentation (Fetters et al 2013; Guetterman et al. 2015; Pluye et al. 2018).

RESULTS

Quantitative Results

The sample consisted of participants in the National Crack Survey (n = 7381 users). The mean duration of crack and/or similar drug use was 80 months, with an average of 13 stones/day. Table 1 shows the detailed characterization (only the significant results) of the study population in association with self-perception of oral health and self-reporting of problems affecting the mouth, teeth and gingiva.

Table 1 – Descriptive characteristics and univariate and bivariate analysis of factors associated with self-perception of oral health and self-reporting of problems affecting the mouth, teeth and gingiva, Brazil, 2012.

	Description	Self-reporting of problems affecting the mouth, teeth and gingiva				Self-perception of oral health			
				Unadjusted	Adjusted			Unadjusted	Adjusted
Variable	n (%)	Yes (%)	No (%)	PR[#] (IC 95%)	PR (IC 95%)	Bad (%)	Good*(%)	PR (IC 95%)	PR (IC 95%)
Age group									
31 years or +	3182 (43,1)	1366 (43,5)	1776 (56,5)	0,87 (0,82-0,91)		1219 (39,4)	1877 (60,6)	1,13 (1,06-1,20)	
18 to 30 years	4199 (56,9)	2077 (49,8)	2092 (50,2)	1		1390 (34,1)	2685 (65,9)	1	
Sex									
Male	5787 (78,7)					2083 (37,9)	3532 (62,9)	1,12 (1,03-1,21)	
Female	1568 (21,3)					520 (33,9)	1013 (66,1)	1	
Education									
incomplete elementary	1737 (23,6)	914 (53,2)	803 (46,8)	1,20 (1,12-1,30)	1,36 (1,07-1,74)				
complete elementary	4246 (57,6)	1915 (45,5)	2296 (54,5)	1,02 (0,95-1,10)	0,85 (0,68-1,07)				
high school / university	1388 (18,8)	608 (44,3)	766 (55,7)	1	1				
Race/Color									
black/brown	5648 (76,7)	2656 (47,3)	2964 (52,7)	1,06(1,00-1,14)		2089 (38,0)	3415 (62,0)	1,23 (1,13-1,34)	1,16(1,05-1,27)
yellow/asian/Indian	166 (2,4)	104 (63,8)	59 (36,2)	1,44(1,26-1,64)		44 (28,4)	111 (71,6)	0,85 (0,64-1,13)	1,06(0,77-1,46)
White	1531 (20,9)	669 (44,8)	823 (55,2)	1		460 (31,2)	1016 (68,6)	1	1
Relationship status									
Single	4448 (60,7)	2140 (48,4)	2278 (51,6)	1,07(1,00-1,13)		1677 (38,6)	2672 (61,4)	1,17(1,08-1,26)	1,20 (1,11-1,3)
separated/divorced/widower	1030 (14,0)	448 (43,8)	574 (56,2)	0,98(0,90-1,07)		320 (32,2)	673 (67,8)	0,95(0,85-1,06)	0,97(0,86-1,09)
married /live together	1856 (25,3)	847 (45,8)	1001 (54,2)	1		605 (33,5)	1202 (66,5)	1	1
Housing (last 30 days)									
apartment/temporary house	4275 (58,0)								
homelles/another situation	3097 (42,0)								
Income (last 30 days)									
up to 1 minimum salary (MS)**	3638 (55,2)	1776 (48,9)	1854 (51,1)	1,09(1,00-1,18)		1414 (39,6)	2154 (60,4)	1,37(1,22-1,53)	
from 1 to 3 MS	2040 (30,9)	937 (46,3)	1086 (53,7)	1,03(0,94-1,12)		668 (34,0)	1299 (66,0)	1,18(1,05-1,34)	
above 3 MS	914 (13,9)	404 (44,7)	500 (55,3)	1		260 (28,9)	329 (71,1)	1	
Income (before starting to use crack)									
up to 1 MS	2740 (46,9)	1314 (48,1)	1418 (51,9)	0,88(0,81-0,95)					
from 1 to 3 MS	2332 (39,9)	1006 (43,3)	1318 (56,7)	0,80(0,73-0,86)					
above 3 MS	770 (13,2)	409 (53,7)	352 (46,3)	1					

	Description	Self-reporting of problems affecting the mouth, teeth and gingiva				Self-perception of oral health			
				Unadjusted	Adjusted			Unadjusted	Adjusted
Variable	n (%)	Yes (%)	No (%)	PR[#] (IC 95%)	PR (IC 95%)	Bad (%)	Good*(%)	PR (IC 95%)	PR (IC 95%)
Crack use									
Yes	7165 (97,3)								
No	200 (2,7)								
Paste/oxi use									
Yes	1280 (17,7)	748 (59,2)	515 (40,8)	1,33(1,26-1,41)	1,74(1,50-2,04)	555 (44,7)	686 (55,3)	1,33(1,24-1,44)	
No	5956 (82,3)	2647 (44,6)	3285 (55,4)	1	1	2026 (34,8)	3789 (65,2)	1	
Alcohol use									
Yes	5680 (77,1)	2706 (48,1)	2919 (51,9)	1,08(1,01-1,14)		2086 (37,9)	3423 (64,1)	1,18(1,09-1,27)	
No	1688 (22,9)	733 (43,6)	947 (56,4)	1		519 (31,4)	1135 (68,6)	1	
Tobacco use									
Yes	6250 (85,0)	3034 (49,0)	3157 (51,0)	1,35(1,24-1,47)		2282 (37,6)	3789 (62,4)	1,28(1,15-1,41)	
No	1100 (15,0)	397 (36,3)	698 (63,7)	1		316 (29,4)	759 (70,6)	1	
Use of other drugs									
Yes	43 (64,5)								
No	24 (35,5)								
History with the crack and similar									
always used	2786 (38,7)	1230 (44,5)	1534 (55,5)	0,89(0,85-0,94)		938 (34,7)	1763 (65,3)	0,93(0,87-0,99)	
more 1 month without using	4415 (61,3)	2139 (48,6)	2262 (51,4)	1		1603 (37,1)	2721 (62,9)	1	
Use of another drug, when was not using crack									
Yes	2262 (48,9)	1160 (51,4)	1095 (48,6)	1,13(1,07-1,21)		989 (40,6)	1314 (59,4)	1,16(1,07-1,25)	
No	2360 (51,1)	1049 (44,6)	1304 (55,4)	1		793 (34,3)	1517 (65,7)	1	
Condoms/barriers in oral sex									
No	3071 (54,4)	1351 (44,3)	1700 (55,7)	0,89(0,84-0,94)	0,76(0,65-0,89)				
Yes	2571 (45,6)	1251 (48,8)	1311 (51,2)	1	1				
Current pregnancy									
Yes	202 (14,5)					46 (22,9)	155 (77,1)	0,59(0,45-0,79)	
No	1194 (85,5)					423 (36,3)	743 (63,7)	1	
Police detention									
Yes	3033 (41,6)	1595 (52,7)	1433 (47,3)	1,22(1,16-1,28)		1238 (41,8)	1727 (58,2)	1,28(1,20-1,37)	
No	4253 (58,4)	1836 (43,3)	2408 (56,7)	1		1358 (32,6)	2810 (67,4)	1	

	Description	Self-reporting of problems affecting the mouth, teeth and gingiva				Self-perception of oral health			
				Unadjusted	Adjusted			Unadjusted	Adjusted
Variable	n (%)	Yes (%)	No (%)	PR[#] (IC 95%)	PR (IC 95%)	Bad (%)	Good*(%)	PR (IC 95%)	PR (IC 95%)
Frequency of use									
Daily	4996 (68,7)	2519 (50,7)	2450 (49,3)	1,27(1,20-1,35)	1,75(1,43-2,15)	1959 (40,1)	2927 (59,9)	1,41(1,30-1,52)	1,20(1,10-1,30)
Sporadic	2273 (31,3)	900 (39,8)	1364 (60,2)	1	1	626 (28,4)	1579 (71,6)	1	1
Crack and/or similar in can									
Yes	3549 (51,8)	1788 (50,6)	1747 (49,4)	1,17(1,11-1,24)		1331 (38,4)	2133 (61,6)	1,11(1,04-1,19)	
No	3302 (48,2)	1404 (42,6)	1888 (57,4)	1		1093 (33,9)	2133 (66,1)	1	
Crack and/or similar in pipe									
Yes	5267 (74,9)	2608 (49,7)	2638 (50,3)	1,21(1,14-1,29)		2004 (39,0)	3135 (61,0)	1,34(1,23-1,45)	1,20(1,10-1,30)
No	1762 (25,1)	713 (40,6)	1041 (59,4)	1		511 (29,6)	1217 (70,4)	1	1
Physical health status									
Bad	2255 (32,0)	1304 (57,9)	948 (42,1)	1,38(1,32-1,46)	1,19(1,02-1,39)	1231 (55,3)	995 (44,7)	1,92(1,81-2,04)	1,91(1,78-2,04)
excellent/very good/good	4793 (68,0)	1968 (41,1)	2818 (58,9)	1	1	1294 (27,3)	3453 (72,7)	1	1
Hepatitis C									
Reagent	170 (2,6)	68 (40,0)	102 (60,0)	0,8(0,65-0,98)					
non-reagent	6282 (97,4)	3000 (48,1)	3238 (51,9)	1					
HIV									
Reagent	320 (5,0)	205 (64,5)	113 (35,5)	1,37(1,26-1,50)		137 (43,1)	181 (56,9)	1,17(1,02-1,34)	
non-reagent	6110 (95,0)	2835 (46,7)	3231 (53,3)	1		2151 (36,2)	3790 (63,8)	1	
Institutional support									
No	6326 (87,3)	585 (63,9)	330 (36,1)	1,45(1,37-1,54)	1,70(1,43-2,02)	501 (55,9)	396 (44,1)	1,69(1,58-1,81)	1,62(1,50-1,75)
Yes	919 (12,7)	2830 (44,7)	3497 (55,3)	1	1	2095 (33,8)	4110 (66,2)	1	1
Health care unit/emergency care unit									
No	5828 (79,8)								
Yes	1476 (20,2)								
Specialized clinic									
No	7002 (96,2)					122 (44,9)	150 (55,1)	1,25(1,09-1,43)	
Yes	276 (3,8)					2469 (36,0)	4381 (64,0)	1	
Therapeutic community									
No	6964 (95,7)								
Yes	309 (4,3)								

	Description	Self-reporting of problems affecting the mouth, teeth and gingiva				Self-perception of oral health			
				Unadjusted	Adjusted			Unadjusted	Adjusted
Variable	n (%)	Yes (%)	No (%)	PR[#] (IC 95%)	PR (IC 95%)	Bad (%)	Good*(%)	PR (IC 95%)	PR (IC 95%)
Transitional host house/therapeutic shelter									
No	6944 (96,5)	167 (67,1)	82 (32,9)	1,45(1,32-1,59)		159 (65,7)	83 (34,3)	1,92(1,75-2,12)	
Yes	250 (3,5)	3222 (46,5)	3706 (53,5)	1		2374 (34,9)	4422 (65,1)	1	
University service									
No	7199 (99,7)								
Yes	22 (0,3)								
Alcohol * Tobacco									
use alcohol*use tobacco					8,29(2,08-33,00)				1,33(1,09-1,63)
use alcohol*no use tobacco					9,08(2,23-36,90)				1,13(0,90-1,42)
no use alcohol*use tobacco					8,20(2,05-32,70)				1,27(1,02-1,57)
no use*no use tabaco					1				1
Schooling * Income before crack									
incomplete elementary*up to 1 MS									1,38(1,11-1,72)
complete elementary*up to 1 MS									1,44(1,17-1,78)
complete elementary*1 to 3 MS									1,26(1,01-1,58)
high school/university*up to 1 MS									1,30(1,03-1,65)
high school/university*1 to 3 MS									1,30(1,02-1,65)
high school/university*above 3 MS									1

[#]PR = prevalence ratio; *G = good (combination of excellent, very good and good) **MS 2012 = US 320

The univariate analysis results presented in Table 1 show the variables that were statistically associated with both dependent variables: self-perception of oral health and self-reporting of problems affecting the mouth, teeth and gingiva.

Poisson regression analysis was conducted with the independent variables. The first analysis (Table 1) found a higher prevalence of problems in users who had less education (incomplete elementary school), used paste/oxy, used condoms/barriers in oral sex, used drugs daily, had worse self-perception of physical health status, did not receive institutional support, and used alcohol and/or tobacco (this association showed that for each individual who did not use licit drugs and demonstrated self-reporting of problems affecting the mouth, teeth and gingiva, 8.3 individuals who used alcohol/tobacco, reported the same problems). The second analysis (Table 1) found lower self-perception in black/brown, users who were single, used drugs daily, smoked crack in a pipe, had worse self-perception of physical health status, did not receive institutional support, used alcohol and/or tobacco, and had less education associated with low income before using crack.

Qualitative Results

Population description

The focal group consisted of 12 male subjects. Their mean age was 34 years and the majority declared themselves to be white (67%). Only one participant completed elementary school, and two enrolled in secondary school. The majority of participants (67%) were single, and all used at least one drug besides crack. The most used drugs were alcohol (75%), tobacco (42%), marijuana (58%), cocaine (83%), inhalants (25%), and crack (100%). The mean duration of use was 162 months (13.5 years), with 50% using for 204-240 months.

Categories and subcategories

Health inequities

This category included two subcategories.

(1) Definition of Oral Health/Disease

Participants reported gingival and calculus problems, which they ascribed to tobacco use. None of the participants reported specifically that they had cavities, but they did report having "holes" in their teeth and that half of their teeth were rotten.

> *... When I run my tongue over my lower teeth, I feel some holes ... but I have no pain. (P1)*

Participant reported that when he had toothache, he went to the dentist and asked that the tooth be extracted. Another stated that tooth loss is natural throughout life, to which the others agreed.

> *With age, especially for a man, two things are embarrassing to us, hair and teeth ... Think how when you are a child, everything is new, right? So, we lose our teeth, it's natural. (P6)*

When asked about oral health, most participants reported that their health was precarious, even aside from pain and sensitivity. They did not associate other forms of oral pain with drug use.

> *I think [my oral health] is very poor! (P9)*

Only one participant demonstrated an expanded view of health, establishing a link between oral health and quality of life and relating the loss of teeth to chewing problems and consequently digestion problems.

> *… If I have good oral health, I have a better quality of life ... I have several problems because my oral health is not good. (P2)*

(2) Relationship between drug use and oral health

All participants related drug use and oral health, emphasizing that the drugs affected their oral health negatively. However, most suggested that in addition to the harmful chemical effects of the drugs on teeth, the lack of self-care due to drug use made the situation much worse.

> *I think that drugs and tobacco are bad for the teeth, but what is worse is people's self-neglect when using ... if the drugs did not weaken us so much, our oral health would be good - not good, but it would be a little better. But what is destructive is personal self-neglect. (P9)*

One participant reported that he managed to maintain oral hygiene even while using drugs, but he was unique in the group.

> *The other day I went to the dentist and he was surprised with my teeth. Because users have very ugly, rotten, missing teeth from using crack ... so I realized that if you brush your teeth at least once a day, every day, you can take care of them* ... (P6)

Another issue addressed in the group was the anesthetic effect of crack in addition to the hallucinogenic effect, leading to continued drug use and lack of perception of tooth pain. The members of the group shared that it is very common for crack users starting rehabilitation treatment to have intense tooth pain because they are no longer exposed to the drugs and their anesthetic and hallucinogenic effects.

> *... many people come here and have no pain. After they have arrived here and stopped using crack, everyone has a toothache... The tooth is open, but when you are smoking and there is residual crack in your system, because cocaine is an anesthetic and crack is derived from cocaine, it numbs your tooth. (P2)*
>
> *I'm more on the hallucinogenic side. This guy is not worried, nor does he have a toothache. (P7)*

The issue of cross-contamination has also been reported, since users often take the drug from the mouth of the person who sells it, and to avoid getting caught by the police, they carry the drug in their mouth to the place of consumption.

Public policies

This category included two subcategories.

(1) <u>Access to health services</u>

Several points were highlighted in the focus groups, including financial and organizational factors and professional-patient relationships. Participants reported difficulty in obtaining prostheses and orthodontic appliances due to their economic conditions. They also discussed the lack of information about partnerships that exist between the health system and universities or other organizations that perform dental care, which could partially meet their needs not covered by the health system.

... orthodontic appliances are expensive. And it's something I needed ... I don't know if I've got it right, but it seems that you can get dentures and appliances from universities. I didn't know. (P9)

Another member of the group expressed dissatisfaction with the public health system, which is largely inaccessible to workers in general and focuses only on curative treatments, with little coverage for preventive care. Everyone in the focus group agreed with this position.

... I would like to give my opinion because I think the public services are very unreliable ... You get there, and if you are not in pain, you will not be helped. (P8)

Participant stated that mental health is not addressed in health units, which greatly hampers the referral and treatment of drug users, who are mainly viewed as irresponsible and inconsequential and rarely as human beings who need help.

Another member of the group argued that it would be very helpful to increase the services available to drug users, not only to stop drug use but also to help users increase their self-esteem and to restore their health by reintegrating them into society. All participants agreed and emphasized that these services should be extended to users' families, who also become ill and vulnerable.

I think the public network should have a service for us because I can't afford it, even if it's cheap ... We should at least have a follow-up, a reference. (P4)

(2) Health professionals

The group emphasized the importance of health professionals, especially dentists, as a gateway to the health system. Dental treatment was considered a significant factor in increasing self-esteem. Participant reported that dental surgeons and staff could assist in referral and treatment of drug dependence.

The dentist or the staff working at the health facility can be a doorway. (P12)

Dental treatment increases self-esteem. So, let's take better care of ourselves. (P5)

The participants stressed the need for a link with health workers, who should guide users in treatment and combat preconceptions, understanding drug use as a disease. The focus group was possible to understand how prejudice and labels are

part of users' lives, and how this negatively affects their access to health services and maintenance of treatments.

> *There are health professionals who have preconceptions. They do not know how to deal with people. They think we are shameless! (P2)*

Mixed Method Results

A mixed method was used to comprehensively evaluate the quantitative and qualitative results, integrating them and identifying convergence or divergence between the methods, as presented in Table 2.

Table 2 – Mixed methods results

QUAL results	QUAN results	Integrated results
Self-perception of poor oral health - influence of several factors (e.g., access to oral health care is limited/expensive) Strong relationship between oral health and drug use - vulnerability, inequality	Determinants of self-reported and self-perceived oral health: education, race/skin color, relationship status Frequency of use, physical health, use of crack pipe, and use of other drugs negatively associated with oral health - vulnerability, inequality	Convergence/complementarity The QUAN results detail this group's vulnerability and show the urgency of multisectoral actions to reduce this vulnerability, inequality and its consequences
Lack of basic information about general and oral health and access of treatments in other places	Difficulty in access to public services (e.g., institutional support)	Convergence/complementarity The QUAL results demonstrate reasons for difficulty in access and ways to minimize this problem
Dissatisfaction with the health system (schedules, focus on curative treatments, non-prioritization of mental health, lack of preparation in health team - preconceptions and labels) Necessity of adding services for drug users Dentistry as a gateway to the health system	Not identified	Unique to QUAL QUAL results highlight the need to reorient health services and to expand/implement appropriate public policies aimed at drug users
Not identified	Use of crack in a pipe negatively affected self-perception of oral health	Unique to QUAN The QUAN results stress the need for action in accordance with harm-reduction policies aiming to improve this groups quality of life.

Source: by authors

DISCUSSION

This study aim to describe the determinants and perceptions of oral health among crack users in Brazil. The results highlight the relationship between drug use and oral health, as well as the vulnerabilities and inequalities suffered by this group and the lack of health services directed toward them. Of particular importance was the finding of convergence of the quantitative and qualitative results from the two populations, resulting from the analysis of the mixed method. Besides the dimension of the number of participants (n = 7381) involved in the quantitative methodology.

The study's findings show strong association between drug use and the perception of poor oral health, either due to the chemical nature of the drugs or by the lack of self-care reported by users. Several studies corroborate these findings, such as those of Baghaie et al*.* (2017), who identified a high prevalence of dental caries and periodontal disease in chemical dependents and Cury et al. (2017) observed a relationship between crack and oral health in men, associating use of these drugs with a higher index of decayed teeth and a lower index of restored and absent teeth. Costa et al. (2011) reported that most drug addicts had poor oral health, that this could be associated with lack of self-care due to drug abuse, and that the greater the dependency, the worse the oral health status. The lack of self-care associated with poor oral health exacerbates the guilty feelings of drug users, often confused with the drug itself and perceived as ill, victims and unable to make decisions, confirming the social stigma surrounding this group (Melo and Maciel 2016).

The vulnerability of and inequality suffered by this study group in relation to oral health were evidenced by several findings, particularly in black/brown and those who were single, less educated, low-income, and in bad physical health. These results are in agreement with other studies, such as that of Boing et al. (2014), who indicated a higher dental caries index, and that of Albini et al. (2015) concluded that poor oral health was more prevalent in young, unmarried, and less educated users of licit and illicit drugs. Another study in Australia demonstrated worse oral health at lower levels of family income (Singh et al. 2018). In a study in Canada, Wallace et al. (2015) concluded that poor oral health among populations

with significant socioeconomic disadvantages and vulnerabilities may be much higher than is reported in health research. Cheng et al. (2015) identified high prevalence of crack pipe sharing, as well as association with high-intensity drug use and other risk and vulnerability markers.

Inequalities in oral health exist in most countries, particularly in vulnerable populations, as observed in this study of crack users. This demonstrates the need for equitable public policies and research agendas that prioritize strategies to minimize such inequalities. This should be a worldwide movement involving policy makers, society, academia, and professionals. This approach is presented in several articles (Williams 2014; Moyses 2012; Lee and Divaris 2014).

With respect to health services and public policies directed toward drug users, the results of this study show dissatisfaction of users, difficulty of access, and lack of information. The importance of the oral health team as a gateway to the health system is highlighted, as was the need for services aimed toward this group and their families. A review of Brazilian crack use and related issues noted instability of intersectoral actions, lack of adequate equipment and trained professionals, and inadequate supply and distribution of specialized services (Moreira et al. 2015). Antunes and Narvai (2010) discussed the role of oral health policies in Brazil and their impact on health inequalities. A New Zealand study showed that health inequalities can only be overcome by implementing policies that address social issues (Moffat et al. 2017).

Change in these circumstances is thus urgently needed, involving the active participation of health professionals, which could have a real impact on reducing health inequalities. In addition, the oral health team should act for policy changes with a view to promoting oral health and equity in health (Watt et al. 2014). Moreover, drug users should receive services focused on patient-centered care; because patient participation in care and a better interprofessional and professional-patient relationship will allow them to attend to their own health needs. This model of health care respects the principle of integrality and builds a personal connection that allows social distance to be overcomed, bringing patient satisfaction and adherence to treatment with positive results and humanized care (Agreli et al. 2016; Apelian et al. 2014).

The limitations of this study are the temporal and local difference in the collection of quantitative data (2012, in public scenes of crack use) and qualitative (2016, in drug recovery clinic), as well as the difference in population size (n quantitative=7381 and n qualitative=12). Another limitation is related to the use of other drugs, in addition to crack/similar drugs, being able interaction between them and diversity in drug composition (quantity and quality). Further, although it could be considered a limitation that the two groups are different, they expressed the same ideas about the relationship of drug use and oral health.

A mixed methods approach was employed because it offered a unique opportunity to explain the research problem, highlighting the potential of both quantitative and qualitative approaches and revealing information that would not have arisen in isolated analyzes, improving understanding of the investigated phenomenon [12-14]. The study's results show convergence in the two groups. This justifies the importance of the research topic and the need of public policies, and emphasizes the vulnerability of this population.

CONCLUSION

The study highlights the need to expand or implement more equitable public policies and create support environments targeted to crack users and their families, as well as strengthen community actions and develop personal skills of this group, in order to minimize the vulnerabilities and inequalities suffered by this population.

It is also important to emphasize that oral health professionals should be considered a gateway to the health system and health services reoriented to better serve this population. Policies should aim to increase access to and maintenance of treatments to offer this population a better quality of life, respecting their individual needs and sociocultural particularities.

The results of this study clarify the methodology and improve the certainty of its results, encouraging researchers to implement new projects using mixed methods approaches in health research. In addition, the results of this method are closer to reality, allowing for better applicability in the health field.

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CONCLUSÕES GERAIS

Os resultados da tese sugerem associação entre o uso de crack e declínio na saúde bucal dos usuários de drogas, destacando-se a vulnerabilidade e iniquidade sofrida por esta população, impactando negativamente na qualidade de vida dos mesmos.

Evidencia-se a necessidade de efetivar políticas públicas direcionadas aos usuários de drogas, com enfoque equitativo e baseando-se na política de redução de danos. Além disso destaca a importância da atuação dos profissionais de saúde bucal nas equipes multidisciplinares, visando a reabilitação integral e reintegração destes pacientes na sociedade.

Pela complexidade do fenômeno que envolve o uso de drogas (ilegalidade, dificuldade de acesso, entre outros) e pela evidência científica ser insuficiente para comprovar que o uso de crack causa danos a saúde bucal, constata-se a necessidade de desenvolvimento de novas pesquisas e recomenda-se mais estudos na área de saúde utilizando a metodologia de métodos mistos, pela clareza dos resultados obtidos neste estudo.

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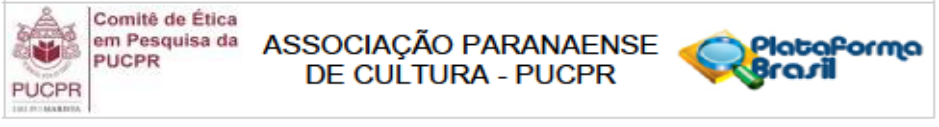
ANEXOS

Parecer do comitê de ética



PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: USUÁRIOS DE CRACK E QUALIDADE DE VIDA: ANÁLISE QUALITATIVA
Pesquisador: DORIANA CRISTINA GAIO GIRATA
Área Temática:
Versão: 2
CAAE: 59939716.5.0000.0020
Instituição Proponente: Pontifícia Universidade Católica do Parana - PUCPR
Patrocinador Principal: Financiamento Próprio

DADOS DO PARECER

Número do Parecer: 1.784.023

Apresentação do Projeto:
O crack não é uma das principais drogas ilícitas de maior consumo no Brasil, porém o expressivo aumento do seu consumo, tornou o uso do crack um problema de saúde pública. Pois leva a varias consequências, que atingem, além do usuário, todo o seu núcleo familiar e social. Alguns estudos
apontam que a qualidade de vida apresentada pelos usuários de drogas foi ruim, independentemente do tipo de substância usada. Sendo que os
familiares dos usuários apresentaram níveis ainda mais baixos de qualidade de vida. Portanto há a necessidade de desenvolvimento de vários estudos que enfoquem esta problemática sob as perspectiva dos próprios usuários, visando guiar a atuação das equipes multiprofissionais, com o intuito de melhorar a qualidade de vida destes indivíduos. O estudo realizado será de abordagem qualitativa e realizado em uma clínica de reabilitação para usuários de drogas, em um município do estado do Paraná. Os sujeitos do estudo serão usuários de crack, maiores de 18 anos, que consumiram a droga por pelo menos um ano. O grupo focal será utilizado como técnica de investigação qualitativa.

Objetivo da Pesquisa:
Objetivo Primário:
Investigar o impacto do uso de crack e outras drogas na qualidade de vida de usuários em recuperação.

Endereço: Rua Imaculada Conceição 1155
Bairro: Prado Velho **CEP:** 80.215-901
UF: PR **Município:** CURITIBA
Telefone: (41)3271-2103 **Fax:** (41)3271-2103 **E-mail:** nep@pucpr.br

Objetivo Secundário:

Analisar os conteúdos dos dados não mensuráveis numericamente (sentimentos, sensações, percepções) relatados no grupo focal.

Avaliação dos Riscos e Benefícios:

Previstos

Comentários e Considerações sobre a Pesquisa:

Sem comentários

Considerações sobre os Termos de apresentação obrigatória:

Presentes e suficientes

Recomendações:

Não há

Conclusões ou Pendências e Lista de Inadequações:

Atendidas as recomendações, consideramos aprovado o prosseguimento da pesquisa.

Considerações Finais a critério do CEP:

Aprovado.

Este parecer foi elaborado baseado nos documentos abaixo relacionados:

Tipo Documento	Arquivo	Postagem	Autor	Situação
Informações Básicas do Projeto	PB_INFORMAÇÕES_BÁSICAS_DO_PROJETO_783646.pdf	05/10/2016 12:15:09		Aceito
Outros	TCUDDORIANA.pdf	05/10/2016 12:12:09	DORIANA CRISTINA GAIO GIRATA	Aceito
TCLE / Termos de Assentimento / Justificativa de Ausência	AUTORIZACAOSHALON.pdf	05/10/2016 12:10:18	DORIANA CRISTINA GAIO GIRATA	Aceito
TCLE / Termos de Assentimento / Justificativa de Ausência	TCLEDORIANA.pdf	05/10/2016 12:09:52	DORIANA CRISTINA GAIO GIRATA	Aceito
Projeto Detalhado / Brochura Investigador	PROJETOPESQUISADORIANA.pdf	05/10/2016 12:09:24	DORIANA CRISTINA GAIO GIRATA	Aceito
Folha de Rosto	FOLHADEROSTDORIANA.pdf	14/09/2016 20:43:00	DORIANA CRISTINA GAIO GIRATA	Aceito

Continuação do Parecer: 1.784.023

Situação do Parecer:
Aprovado

Necessita Apreciação da CONEP:
Não

CURITIBA, 20 de Outubro de 2016

Assinado por:
NAIM AKEL FILHO
(Coordenador)

Endereço: Rua Imaculada Conceição 1155
Bairro: Prado Velho **CEP:** 80.215-901
UF: PR **Município:** CURITIBA
Telefone: (41)3271-2103 **Fax:** (41)3271-2103 **E-mail:** nep@pucpr.br

TCLE - Termo de consentimento livre e esclarecido

TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

Você está sendo convidado como voluntário a participar do estudo intitulado “Usuários de crack e qualidade de vida: análise qualitativa”, que tem como objetivo investigar o impacto do uso de crack e outras drogas na qualidade de vida de usuários em recuperação. Acreditamos que esta pesquisa seja importante porque há a necessidade de desenvolvimento de estudos que enfoquem este tema, visando guiar a atuação das equipes multiprofissionais, com o intuito de melhorar a qualidade de vida dos usuários de crack em recuperação.

PARTICIPAÇÃO NO ESTUDO

A sua participação no referido estudo será fazer parte de uma roda de conversa, que se trata de uma atividade desenvolvida em grupo, considerada de rotina nesse tipo de tratamento, na Clínica de reabilitação que você está, onde as pessoas relatem situações e descrevam a influência das drogas na sua qualidade de vida e o que mudou após o início do tratamento. Esta roda de conversa será realizada durante o período de tratamento, em dois encontros de aproximadamente duas horas cada um.

RISCOS E BENEFÍCIOS

Você foi alertado de que, da pesquisa a se realizar, você pode esperar alguns benefícios, tais como a melhor atuação da equipe multiprofissional que atua com usuários de drogas, a partir do relato e desejos das pessoas que estão em tratamento, melhorando a qualidade de vida e a continuidade do tratamento; portanto o benefício não será direto, mas indireto. Você foi informado, também, que não irão ocorrer desconfortos ou riscos durante a sua participação; e que se, por constrangimento ou qualquer outro motivo, você não se sentir à vontade durante a roda de conversa, poderá pedir para sair do grupo.

SIGILO E PRIVACIDADE

Você está ciente de que a sua privacidade será respeitada, ou seja, seu nome ou qualquer outro dado ou elemento que possa, de qualquer forma, identifica-lo, será mantido em sigilo. Os pesquisadores se responsabilizam pela guarda e confidencialidade dos dados, bem como a não exposição dos dados de pesquisa.

USO DE IMAGEM

Autorizo o uso de minha imagem e áudio para fins da pesquisa, sendo seu uso restrito para analisar o conteúdo da roda de conversa (grupo focal) e publicação de algumas partes das falas, sem identificação dos participantes.

AUTONOMIA

É assegurada a assistência durante toda pesquisa, bem como lhe é garantido o livre acesso a todas as informações e esclarecimentos adicionais sobre o estudo e suas consequências, enfim, tudo o que você queira saber antes, durante e depois da sua participação. Você foi informado, também, de que pode se recusar a participar

Rubrica do sujeito da pesquisa

Rubrica do pesquisador

do estudo, ou retirar seu consentimento a qualquer momento, sem precisar justificar, e se desejar sair da pesquisa, não sofrerá qualquer prejuízo à assistência que vem recebendo.

RESSARCIMENTO E INDENIZAÇÃO

Como a pesquisa será realizada no local de tratamento da dependência da droga, não haverá despesas decorrentes da sua participação na pesquisa, tais como transporte, alimentação, entre outros. Porém, caso ocorra algum dano decorrente da sua participação no estudo, você será devidamente indenizado, conforme determina a lei.

CONTATO

Os pesquisadores envolvidos com o referido projeto são Doriana Cristina Gaio Girata, aluna de doutorado do Programa de Pós-graduação em Odontologia da PUCPR e Dra. Renata Iani Werneck, professora do Programa e Orientadora deste trabalho. Você poderá manter contato com as pesquisadoras pelos telefones (41-99666188).

O Comitê de Ética em Pesquisa em Seres Humanos (CEP) é composto por um grupo de pessoas que estão trabalhando para garantir que seus direitos como participante de pesquisa sejam respeitados. Ele tem a obrigação de avaliar se a pesquisa foi planejada e se está sendo executada de forma ética. Se você achar que a pesquisa não está sendo realizada da forma como você imaginou ou que está sendo prejudicado de alguma forma, você pode entrar em contato com o Comitê de Ética em Pesquisa da PUCPR (CEP) pelo telefone (41) 3271-2292 entre segunda e sexta-feira das 08h00 às 17h30 ou pelo e-mail nep@pucpr.br.

DECLARAÇÂO

Declaro que li e entendi todas as informações presentes neste Termo de Consentimento Livre e Esclarecido e tive a oportunidade de discutir as informações deste termo. Todas as minhas perguntas foram respondidas e eu estou satisfeito com as respostas. Entendo que receberei uma via assinada e datada deste documento e que outra via assinada e datada será arquivada pelos pesquisadores, responsáveis pelo estudo.

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

Dados do participante da pesquisa

Nome:

Telefone:

e-mail:

Local, _____ de _____ de _____.

Assinatura do participante da pesquisa Assinatura da Pesquisadora

Rubrica do sujeito da pesquisa

Rubrica do pesquisador

Normas para publicação artigo 1 – Brazilian Oral Research

Mission, scope, and submission policy

Brazilian Oral Research - BOR (online version ISSN 1807-3107) is the official publication of the Sociedade Brasileira de Pesquisa Odontológica - SBPqO (the Brazilian division of the International Association for Dental Research - IADR). The journal has an Impact Factor™ of 0.937 (Institute for Scientific Information - ISI), is peer-reviewed (double-blind system), and its mission is to disseminate and promote an information interchange concerning the several fields in dentistry research and/or related areas with gold open access.

BOR invites the submission of original and review manuscripts and papers in the following typology: Original Research (complete manuscript or Short Communication), Critical Review of Literature, Systematic Review (and Meta-Analysis) and Letters to the Editor. All submissions must be exclusive to.

Manuscripts and all corresponding documentation should be exclusively submitted through ScholarOne Manuscripts™ via the online submission link (http://mc04.manuscriptcentral.com/bor-scielo).

The evaluation process of manuscript's scientific content will only be initiated after meeting of all the requirements described in the present Instructions for Authors. Any manuscript that does not meet these requirements will be returned to the corresponding author for adaptations.

Important: Once having been accepted on their scientific merit, all manuscripts will be submitted for grammar and style revision as per the English language. Contact BOR by bor@sbpqo.org.br to get information about the recommended translation companies.The authors should forward the revised text with the enclosed revision certificate provided by the chosen editing company. Linguistic revisions performed by companies that do not provide the mentioned certificate will not be accepted. As an exception, this rule does not apply when one of the authors is a native English speaker.

Presentation of the manuscript

The manuscript text should be written in English and provided in a digital file compatible with “Microsoft Word” (in DOC, DOCX, or RTF format).

All figures (including those in layouts/combinations) must be provided in individual and separate files, according to recommendations described under the specific topic.

Photographs, micrographs, and radiographs should be provided in TIFF format, according to the recommendations described under the specific topic.

Charts, drawings, layouts, and other vector illustrations must be provided in a PDF format individually in separate files, according to the recommendations described under the specific topic.

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Title page (compulsory data)

This must indicate the specialty* or research field focused on in the manuscript.

*Anatomy; Basic Implantodontology and Biomaterials; Behavioral Sciences; Biochemistry; Cariology; Community Dental Health; Craniofacial Biology; Dental Materials; Dentistry; Endodontic Therapy; Forensic Dentistry; Geriatric Dentistry; Imaginology; Immunology; Implantodontology – Prosthetics; Implantodontology – Surgical; Infection Control; Microbiology; Mouth and Jaw Surgery; Occlusion; Oral Pathology; Orthodontics; Orthopedics; Pediatric Dentistry; Periodontics; Pharmacology; Physiology; Prosthesis; Pulp Biology; Social/Community Dentistry; Stomatology; Temporomandibular Joint Dysfunction.

Informative and concise title, limited to a maximum of 110 characters, including spaces.

Names of all authors written out in full, including respective telephone numbers and email addresses for correspondence. We recommend that authors collate the names present in the Cover Letter with the profile created in ScholarOne™, to avoid discrepancies.

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Data of institutional/professional affiliation of all authors, including university (or other institution), college/program, department, city, state, and country, presented according to internal citation norms established by each author's institution. Verify that such affiliations are correctly entered in ScholarOne™.

Abstract: This should be presented as a single structured paragraph (but with no subdivisions into sections) containing the objective of the work, methodology, results, and conclusions. In the System if applicable, use the Special characters tool for special characters.

Keywords: Ranging from 3 (three) to 5 (five) main descriptors should be provided, chosen from the keywords registered at http://decs.bvs.br/ or http://www.nlm.nih.gov/mesh/MBrowser.html (no synonyms will be accepted).

Main Text

Introduction: This should present the relevance of the study, and its connection with other published works in the same line of research or field, identifying its limitations and possible biases. The objective of the study should be concisely presented at the end of this section.

Methodology: All the features of the material pertinent to the research subject should be provided (e.g., tissue samples or research subjects). The experimental, analytical, and statistical methods should be described in a concise manner, although in detail, sufficient to allow others to recreate the work. Data from manufacturers or suppliers of products, equipment, or software must be explicit when first mentioned in this section, as follows: manufacturer's name, city, and country. The computer programs and statistical methods must also be specified. Unless the objective of the work is to compare products or specific systems, the trade names of techniques, as well as products, or scientific and clinical equipment should only be cited in the "Methodology" and "Acknowledgments" sections, according to each case. Generic names should be used in the remainder of the manuscript, including the title. Manuscripts containing radiographs, microradiographs, or SEM images, the following information must be included: radiation source, filters, and kV levels used. Manuscripts reporting studies on humans should include proof that the research was ethically conducted according to the Helsinki Declaration (World Medical Association,

http://www.wma.net/en/30publications/10policies/b3/). The approval protocol number issued by an Institutional Ethics Committee must be cited. Observational studies should follow the STROBE guidelines (http://strobe-statement.org/), and the check list must be submitted. Clinical Trials must be reported according to the CONSORT Statement standard protocol (http://www.consort-statement.org/); systematic reviews and meta-analysis must follow the PRISMA (http://www.prisma-statement.org/), or Cochrane protocol (http://www.cochrane.org/).

Clinical Trials

Clinical Trials according to the CONSORT guidelines, available at www.consort-statement.org. The clinical trial registration number and the research registration name will be published along with the article.

Manuscripts reporting studies performed on animals must also include proof that the research was conducted in an ethical manner, and the approval protocol number issued by an Institutional Ethics Committee should be cited. In case the research contains a gene registration, before submission, the new gene sequences must be included in a public database, and the access number should be provided to BOR. The authors may use the following databases:

GenBank: http://www.ncbi.nlm.nih.gov/Genbank/submit

EMBL: http://www.ebi.ac.uk/embl/Submission/index.html

DDBJ: http://www.ddbj.nig.ac.jp

Manuscript submissions including microarray data must include the information recommended by the MIAME guidelines (Minimum Information About a Microarray Experiment: http://www.mged.org/index.html) and/or itemize how the experimental details were submitted to a publicly available database, such as: ArrayExpress: http://www.ebi.ac.uk/arrayexpress/

GEO: http://www.ncbi.nlm.nih.gov/geo/

Results: These should be presented in the same order as the experiment was performed, as described under the "Methodology" section. The most significant results should be described. Text, tables, and figures should not be repetitive. Statistically relevant results should be presented with enclosed corresponding p values.

Tables: These must be numbered and cited consecutively in the main text, in Arabic numerals. Tables must be submitted separately from the text in DOC, DOCX, or RTF format.

Discussion: This must discuss the study results in relation to the work hypothesis and relevant literature. It should describe the similarities and differences of the study in relation to similar studies found in literature, and provide explanations for the possible differences found. It must also identify the study's limitations and make suggestions for future research.

Conclusions: These must be presented in a concise manner and be strictly based on the results obtained in the research. Detailing of results, including numerical values, etc., must not be repeated.

Acknowledgments: Contributions by colleagues (technical assistance, critical comments, etc.) must be given, and any bond between authors and companies must be revealed. This section must describe the research funding source(s), including the corresponding process numbers.

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BOR employs a plagiarism detection system. When you send your manuscript to the journal it may be analyzed-not merely for the repetition of names/affiliations, but rather the sentences or texts used.

References: Only publications from peer-reviewed journals will be accepted as references. Unfinished manuscripts, dissertations, theses, or abstracts presented in congresses will not be accepted as references. References to books should be avoided.

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

Spelling of scientific terms: When first mentioned in the main text, scientific names (binomials of microbiological, zoological, and botanical nomenclature) must be written out in full, as well as the names of chemical compounds and elements.

Units of measurement: These must be presented according to the International System of Units (http://www.bipm.org or http://www.inmetro.gov.br/consumidor/unidLegaisMed.asp).

Footnotes on the main text: These must be indicated by asterisks and restricted to the bare minimum.

Figures: Photographs, microradiographs, and radiographs must be at least 10 cm wide, have at least 500 dpi of resolution, and be provided in TIFF format. Charts, drawings, layouts, and other vector illustrations must be provided in a PDF format. All the figures must be submitted individually in separate files (not inserted into the text file). Figures must be numbered and consecutively cited in the main text in Arabic numerals. Figure legends should be inserted together at the end of the text, after the references.

Characteristics and layouts of types of manuscripts

Original Research

Limited to 30,000 characters including spaces (considering the introduction, methodology, results, discussion, conclusion, acknowledgments, tables, references, and figure legends). A maximum of 8 (eight) figures and 40 (forty) references will be accepted. The abstract can contain a maximum of 250 words.

Layout - Text Files

Title Page; Main text (30,000 characters including spaces); Abstract: a maximum of 250 words; Keywords: 3 (three)-5 (five) main descriptors; Introduction; Methodology; Results; Discussion; Conclusion; Acknowledgments; Tables; References: maximum of 40 references; Figure legends

Layout - Graphic Files

Figures: a maximum of 8 (eight) figures, as described above.

Short Communication

Limited to 10,000 characters including spaces (considering the introduction, methodology, results, discussion, conclusion, acknowledgments, tables, references, and figure legends). A maximum of 2 (two) figures and 12 (twelve) references will be allowed. The abstract can contain a maximum of 100 words.

Layout - Text Files

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Layout- Graphic Files

Figures: a maximum of 2 (two) figures, as described above.

Critical Review of Literature

The submission of this type of manuscript will be performed only by invitation of the BOR Publishing Commission. All manuscripts will be submitted to peer-review. This type of manuscript must have a descriptive and discursive content, focusing on a comprehensive presentation and discussion of important and innovative scientific issues, with a limit of 30,000 characters including spaces (considering the introduction, methodology, results, discussion, conclusion, acknowledgments, tables, references, and figure legends). It must include a clear presentation of the scientific object, logical argumentation, a methodological and theoretical critical analysis of the studies, and a summarized conclusion. A maximum of 6 (six) figures and 50 (fifty) references is permitted. The abstract must contain a maximum of 250 words.

Layout- Text Files

Title page; Main text (30,000 characters including spaces); Abstract: a maximum of 250 words; Keywords: 3 (three)-5 (five) main descriptors; Introduction; Methodology; Results; Discussion; Conclusion; Acknowledgments; Tables; References: maximum of 50 references; Figure legends

Layout - Graphic Files

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

Systematic Review and Meta-Analysis

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

figures relevant to the review must be presented as previously described. The abstract can contain a maximum of 250 words.

Layout - Text Files

Title page; Main text (30,000 characters including spaces); Abstract: a maximum of 250 words; Question formulation; Location of the studies; Critical Evaluation and Data Collection; Data analysis and presentation; Improvement; Review update; References: no limit on the number of references; Tables

Layout - Graphic Files

Figures: no limit on the number of figures

Letter to the Editor

Letters must include evidence to support an opinion of the author(s) about the scientific or editorial content of the BOR, and must be limited to 500 words. No figures or tables are permitted.

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The manuscript submitted for publication must include the Copyright Transfer Agreement and the Responsibility Statements, available in the online system and mandatory.

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Tables, in DOC, DOCX, or RTF format.
Declaration of interests and funding, submitted in a separate document and in a PDF format. (if applicable)
Justification for participation of each author, provided in a separate document and in a PDF format.
Photographs, microradiographs, and radiographs (10 cm minimum width, 500 dpi minimum resolution) in TIFF format. (http://www.ncbi.nlm.nih.gov/pmc/pub/filespec-images/)
Charts, drawings, layouts, and other vector illustrations in a PDF format.
Each figure should be submitted individually in separate files (not inserted in the text file).

Publication fees

Authors are not required to pay for the submission or review of articles.

EXAMPLES OF REFERENCES

Journals

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

Bhutta ZA, Darmstadt GL, Hasan BS, Haws RA. Community-based interventions for improving perinatal and neonatal health outcomes in developing countries: a review of the evidence. Pediatrics. 2005;115(2 Suppl):519-617. doi:10.1542/peds.2004-1441.

Usunoff KG, Itzev DE, Rolfs A, Schmitt O, Wree A. Nitric oxide synthase-containing neurons in the amygdaloid nuclear complex of the rat. Anat Embryol (Berl). 2006 Oct 27. Epub ahead of print. doi: 10.1007/s00429-006-0134-9

Walsh B, Steiner A, Pickering RM, Ward-Basu J. Economic evaluation of nurse led intermediate care versus standard care for post-acute medical patients: cost minimisation analysis of data from a randomised controlled trial. BMJ. 2005 Mar 26;330(7493):699. Epub 2005 Mar 9.

Papers with Title and Text in Languages Other Than English

Li YJ, He X, Liu LN, Lan YY, Wang AM, Wang YL. [Studies on chemical constituents in herb of Polygonum orientale]. Zhongguo Ahong Yao Za Zhi. 2005 Mar;30(6):444-6. Chinese.

Supplements or Special Editions

Pucca Junior GA, Lucena EHG, Cawahisa PT. Financing national policy on oral health in Brazil in the context of the Unified Health System. Braz Oral Res. 2010 Aug;24 Spec Iss 1:26-32.

Online Journals

Barata RB, Ribeiro MCSA, De Sordi M. Desigualdades sociais e homicídios na cidade de São Paulo, 1998. Rev Bras Epidemiol. 2008;11(1):3-13 [cited 2008 Feb 23]. Available from: http://www.scielosp.org/pdf/rbepid/v11n1/01.pdf.

Books

Stedman TL. Stedman's medical dictionary: a vocabulary of medicine and its allied sciences, with pronunciations and derivations. 20th ed. Baltimore: Williams & Wilkins; 1961. 259 p.

Books Online

Foley KM, Gelband H, editors. Improving palliative care for cancer [monograph on the Internet]. Washington: National Academy Press; 2001 [cited 2002 Jul 9]. Available from: http://www.nap.edu/books/0309074029/html/.

Websites

Cancer-Pain.org [homepage on the Internet]. New York: Association of Cancer Online Resources, Inc.; c2000 [cited 2002 Jul 9]. Available from: http://www.cancer-pain.org/.

Instituto Brasileiro de Geografia e Estatística [homepage]. Brasília (DF): Instituto Brasileiro de Geografia e Estatística; 2010 [cited 2010 Nov 27]. Available from: http://www.ibge.gov.br/home/default.php.

World Health Organization [homepage]. Geneva: World Health Organization; 2011 [cited 2011 Jan 17]. Available from: http://www.who.int/en/

Normas para publicação artigo 2 – Journal of Dental Research (JDR)

The *Journal of Dental Research (JDR)* adheres to the CSE (8th Edition) editorial style. All submitted manuscripts should be formatted in this style

The *Journal of Dental Research* (*JDR*) is a peer-reviewed scientific journal dedicated to the dissemination of new knowledge and information on all science relevant to dentistry and to the oral cavity and associated structures in health and disease. The *Journal of Dental Research*'s primary readership consists of oral, dental and craniofacial researchers, clinical scientists, hard- tissue scientists, dentists, dental educators, and oral and dental policy-makers. The *Journal* is published monthly, allowing for frequent dissemination of its leading content. The *Journal of Dental Research* also offers OnlineFirst, by which forthcoming articles are published online before they are scheduled to appear in print.

Authors of all types of articles should be aware of the following guidelines when submitting to JDR.

ONLINE SUBMISSION

Submissions to the *Journal of Dental Research* are only accepted for consideration via the SAGETrack online manuscript submission site at http://mc.manuscriptcentral.com/jdr. Authors who do not have an active account within the system are required to create a new account by clicking, "Create Account," on the log-in page. The system will prompt the authors through a step by step process to create their account. Once created authors can submit their manuscripts by entering their "Author Center" and clicking the button by "Click Here to Submit a New Manuscript."

If any difficulty is encountered at anytime during the account creation or submission process, authors are encouraged to contact the *Journal of Dental Research* at jdr@iadr.org.

MANUSCRIPT REQUIREMENTS BY TYPE

The *Journal of Dental Research* accepts the following types of manuscripts for consideration:

Original Research Reports: These manuscripts are based on clinical, biological, and biomaterials and bioengineering subject matter. Manuscripts submitted as research reports have a limit of 3,200 words (including introduction, materials, methods results, discussion and; excluding abstracts, acknowledgments, figure legends and references); a total of 5 figures or tables; 40 references; and must contain a 300 word abstract.

Letters to the Editor*: Letters must include evidence to support a position about the scientific or editorial content of the *JDR*. Manuscripts submitted as a letter to editor have a limit of 250 words. No figures or tables are permitted. Letters on published articles must be submitted within 3 months of the article's print publication date.

Guest Editorials*: A clear and substantiated position on issues of interest to the readership community can be considered for this manuscript type. Guest Editorials are limited to 1,000 words. No figures or tables are permitted.

Discovery!: Essays that explore seminal events and creative advances in the development of dental research are considered for the "Discovery!" section of the

journal. Manuscripts submitted for “Discovery!” have a limit of 2,500 words and a total of 2 figures or tables. Manuscripts are to be submitted by invitation only.

Critical Reviews in Oral Biology & Medicine: These manuscripts should summarize information that is well known and emphasize recent developments over the last three years with a prominent focus on critical issues and concepts that add a sense of excitement to the topic being discussed. Manuscripts are to be submitted by invitation only. Authors interested in submitting to this section must contact the Editor of *Critical Reviews in Oral Biology & Medicine,* Dr. Dana Graves, at dgraves@iadr.org for submission approval and instructions. Manuscripts submitted as Critical Reviews have a limit of 4,000 words; a total of 6 figures or tables; 60 references; and must contain a 300 word abstract.

Additional Instructions for Critical Reviews*:*

-It is important to include several illustrations or diagrams to enhance clarity. Manuscripts that lack figures or diagrams typically receive a low priority score.

-Summarize important concepts in tables or flow charts or show critical data in the form of figures. NOTE: authors will need to obtain permission to reproduce a previously published figure or table.

-Due to the broad readership, abbreviations commonly recognized in one field may not be readily apparent to those in a different field. Keep abbreviation use to a minimum.

-The cover page, abstract, text, summary, figure legends, and tables should be combined into a single Word document. Figures should be submitted as a separate document.

-To view examples of recent Critical Reviews in the Journal, please click the following links:
http://jdr.iadrjournals.org/cgi/content/full/86/9/800 http://jdr.iadrjournals.org/cgi/content/full/85/7/584

*Brief responses to Letters to the Editor or Guest Editorials will be solicited for concurrent publication.

Clinical Reviews (formerly Concise Reviews): These manuscripts are generally systematic reviews of topics of high clinical relevance to oral, dental and craniofacial research. Meta-analyses should be considered only when sufficient numbers of studies are available. Manuscripts that include investigations of limited study quality of under-studied areas are typically not acceptable as topics for a clinical review. Although some systematic reviews may be well done, those that receive highest scientific priority will only be considered given the very limited space allowed for these reviews in the journal.

Manuscripts submitted as Clinical Reviews have a strict limit of 4,000 words (including introduction, materials, methods results, discussion and; excluding abstracts, acknowledgments, figure legends and references); a total of 6 figures or tables; up to a maximum of 60 references; and must contain a 300 word abstract. Manuscripts above the 4,000 word/6 figure or table limit may use supplemental appendices for other supporting information that would be available online only.

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-It is important to include illustrations or diagrams to enhance clarity. Manuscripts that lack figures or diagrams typically receive a low priority score.

-Summarize important concepts in tables or flow charts or show critical data in the form of figures. NOTE: authors will need to obtain permission to reproduce a previously published figure or table.

-Due to the broad readership, abbreviations commonly recognized in one field may not be readily apparent to those in a different field. Keep abbreviation use to a minimum.
-The cover page, abstract, text, summary, figure legends, and table(s) should be combined into a single Word document. Figures should be submitted as a separate document.
-To view examples of recent Clinical Reviews in the Journal, please click the following links: http://jdr.sagepub.com/content/90/3/304.full.pdf+html
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ACKNOWLEDGMENTS

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Any perceived or actual conflicts of interest need to be identified in the acknowledgments section. The *JDR* abides by the International Committee of Medical Journal Editors guidelines for the Ethical Considerations in the Conduct and Report of Research (http://www.icmje.org). Authors are requested to include this information in the acknowledgments section and the corresponding author must confirm that all co-authors have reported any potential conflicts.

FIGURE AND TABLE REQUIREMENTS

These guidelines are intended to aid authors in providing figures that will reproduce well in both print and online media. Submitting digital image files that conform to these guidelines will prevent delays in the review and publication processes, and maximize the published quality of your figures.

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JDR figures can fall into one of three categories: Continuous-tone images, Line-art images, and Combination images. Each image type has specific requirements in terms of the resolution needed for publication and the file types best suited for the figure. See the following panels for examples and requirements.

Continuous-tone Image: Minimum resolution: 300dpi. Preferred File Formats: TIFF, Bitmap.
Line-art Image: Minimum resolution: 800dpi. Preferred File Formats: EPS, PowerPoint, Illustrator.
Combination Image Minimum resolution: 800dpi. Preferred File Formats: PDF, EPS,
PowerPoint, Illustrator, InDesign.

Resolution

In order for a figure to be used in publication, its Digital Image File must have the required resolution when it is created. The resolution cannot be raised *after* the original image is made. Attempting to do so (for example, with Adobe Photoshop's© *"Image Size"* command) results in the addition of artificial pixels that distort the image and lower its sharpness. The figures on the right show an example of this reduced sharpness.

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The International Committee of Medical Journal Editors (ICMJE) recommendations note that scientific misconduct includes deceptive manipulation of images. Figures submitted to the *Journal of Dental Research* should be minimally processed and should reflect the integrity of the original data in the image(s). Adjustments to images in brightness, contrast, or color balance should be applied equally to the entire image, provided they do not distort any data in the figure, including the background. Selective adjustments and touch-up tools used on portions of a figure are not appropriate. Images should not be layered or combined into a single image unless it is stated that the figure is a product of time-averaged data. All adjustments to image date should be clearly disclosed in the figure legend. Images may be additionally screened to confirm faithfulness to the original data. Authors are expected to supply raw image data upon request. Authors should also list tools and software used to collect image data and should document settings and manipulations in the Methods section.
These guidelines were derived from those provided by the *Journal of Cell Biology* and *Nature*:
http://jcb.rupress.org/editorial-policies#data-integrity
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Limit fonts used in any figure to Times, Times New Roman, Arial, Frutiger, and Sabon. Other fonts cannot be guaranteed to reproduce properly.
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REFERENCES

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Groups of persons who have contributed materially to the paper but whose contributions do not justify authorship may be listed under such headings as “clinical investigators” or “participating investigators,” and their function or contribution should be described—for example, “served as scientific advisors,” “critically reviewed the study proposal,” “collected data,” or “provided and cared for study patients.” Because readers may infer their endorsement of the data and conclusions, these persons must give written permission to be acknowledged.

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