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The use of complementary and integrative practices in oral health

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ABSTRACT. The World Health Organization recognizes the medical practices derived from the culture of each country, as Traditional Medicine, but all over the world, there has been no consensus about the denomination of these practices. In Brazil, the Ministry of Health recognizes the use of the following, as Complementary and Integrative Practices (CIP): Acupuncture, Homeopathy, Medicinal Plants/Phytotherapy, Thermal Water/Crenotherapy, Anthroposophic Medicine. Based on the therapies recognized by the Ministry of Health, the Brazilian Federal Council of Dentistry regulated the use of CIP in oral health: Acupuncture, Homeopathy, Phytotherapy, Laser Therapy, Flower Therapy and Hypnosis. This article presents the results of a systematic review about positive and negative evidence of the use of PIC in oral health. We analyzed 91 papers published between 2000 and 2010. Laser therapy and Phytotherapy were the CIP most tested. Laser therapy studies reported more negative results, while the Phytotherapy studies reported more positive results. Papers on Flower Therapy were not included because we found no RCT about this CIP. We found more positive than negative outcomes for the use of CIP in oral health and analysis of the papers showed that only a few authors reported the clinical outcomes. Due to the holistic perspective of CIP, we believe it is possible to show more consistent results of use of these practices in oral health, provided that a broader view (beyond quantitative parameters) is incorporated from the planning to analysis of studies in this area.

Keywords: review, complementary therapies, dentistry.

O uso das práticas integrativas e complementares na odontologia

RESUMO. A Organização Mundial de Saúde reconhece como medicina tradicional as práticas médicas derivadas da cultura de cada país, porém, não há consenso sobre a denominação de tais práticas. No Brasil, o Ministério da Saúde reconhece como Práticas Integrativas e Complementares (PIC): Acupuntura, Homeopatia, Plantas Medicinais/Fitoterapia, Termalismo/Crenoterapia, Medicina Antroposófica. Com base nas terapias reconhecidas pelo Ministério da Saúde, o Conselho Federal de Odontologia regulamentou o uso das PIC: Acupuntura, Homeopatia, Fitoterapia, Laserterapia, Terapia Floral e Hipnose. Este artigo apresenta e discute resultados de uma revisão sistemática sobre evidências positivas e negativas do uso das PIC em saúde bucal. Foram analisados 91 artigos publicados entre 2000 e 2010. Laserterapia e Fitoterapia foram as PIC mais testadas. Constatou-se mais resultados negativos sobre Laserterapia e mais resultados positivos sobre Fitoterapia. Artigos sobre Terapia Floral não foram incluídos porque não foram encontrados estudos clínicos controlados randomizados sobre esta PIC. Houve predominância de resultados positivos e poucos autores relataram a significância clínica das intervenções. Acredita-se que é possível mostrar resultados mais consistentes sobre o uso das PIC em saúde bucal, a partir de uma visão mais ampla (além de parâmetros quantitativos) assumida desde o planejamento até a análise dos estudos nesta área.

Palavras-chave: revisão, terapias complementares, odontologia.

Introduction

Systematic reviews in oral health are important, especially those about less studied themes, such as Complementary and Integrative Practices (CIP). The importance of producing systematic reviews in oral health is based on the idea that 'oral health is part of total health and essential to quality of life' (AL-OTAIBI et al., 2003). Moreover one of the goals of the WHO Global Oral Health Program (ORH) is to "[…] translate the evidence into action programmes" (WHO, 2014, p. 1).

The World Health Organization recognizes the medical practices derived from the culture of each country, as Traditional Medicine, but all over the world, there has been no consensus about the denomination of these practices (BARROS; NUNES, 2006; PETERS et al., 2002; SOUSA et al., 2012). In Brazil, the Ministry of Health recognizes the use of the following, as Complementary and

Integrative Practices (CIP): Acupuncture, Homeopathy, Medicinal Plants/Phytotherapy, Thermal Water/Crenotherapy, Anthroposophic Medicine (MINISTRY OF HEALTH - BRAZIL, 2008). Based on the therapies recognized by the Ministry of Health, the Brazilian Federal Council of Dentistry regulated the use of six CIPs in oral health: Acupuncture, Homeopathy, Phytotherapy, Laser Therapy, Flower Therapy and Hypnosis (CFO, 2008).

According to the Brazilian legislation:

Acupuncture

> […] comprises a group of procedures which allows the necessary stimulus of specific anatomical places through the insertion of thread-like metal needles for the promotion, maintenance and recovery of health, as well as for the prevention of injuries and diseases (MINISTRY OF HEALTH – BRAZIL, 2013, p. 15).

Homeopathy is

> […] a complex medical system based on holistic and vital principles and the use of the natural law of healing, which was enunciated by Hippocrates in the 6th century B.C. (MINISTRY OF HEALTH - BRAZIL, 2013, p. 17).

Phytotherapy, is a

> […] therapeutic process characterized by the use of medicinal plants in their different pharmaceutical forms, without the use of isolated active substances, although of vegetable origin (MINISTRY OF HEALTH - BRAZIL, 2013, p. 20).

Laser Therapy, Flower Therapy and Hypnosis are not mentioned in National Policy on Integrative and Complementary Practices of the SUS (Brazilian national health system), but are officially recognized as CIP by the Brazilian Federal Council of Dentistry (CFO, 2008).

From the point of view of the Brazilian Federal Council of Dentistry, the aim of Laser therapy

> […] is to empower dentists in order to ensure wide and safe professional practice, respecting the limits of the professional field of expertise of the dentist". Dentists could use this practice for diagnosis and treatments in oral health (CFO, 2008, p. 6).

Flower Therapy is defined as the

> […] complementary practice of health and well being, considering the use of flower essences as a treatment method by focusing attention on the individual and not the disease. It may be used by anyone, of all ages; there are no contraindications, and no interactions or production of drugs. Moreover, it offers scope of prevention and humanization, respecting the limits of the professional field of expertise of the dentist (CFO, p. 3, 2008).

Hypnosis is defined as

> […] a practice endowed with methods and techniques that provide increased therapeutic efficacy in all specialties of dentistry, requires no additional resources such as drugs or instruments and can be used in the clinical setting (CFO, 2008, p. 4).

Bearing in mind these concepts the aim of this paper was to present and discuss the findings of a systematic review about clinical use of CIP in Oral Health.

Material and methods

A systematic review that focuses beyond the quantitative view has been published (BARANOWSKY et al., 2009; HARDEN, 2010; SMITH et al., 2009). Considering this perspective, this systematic review was developed with the aim of finding out about the evidence produced in the field of CIP applied to oral health. Based on this we analyzed articles according to the following categories: author, year of publication and clinical outcome of RCT analyzed (statistical and/or clinical significance). This posture was adopted because we dedicated our researches to Social Sciences in Public Health and to Complementary and Integrative Practices[1]. Taking into account this perspective, the PUBMED database was chosen because we found that this database is considered one of the most important in the field of health and is accessed worldwide (BEIKI et al., 2005, HOONG, 2010; PACKER et al., 2007).

As regards the time-frame established in which to review the articles, we assumed the definition of an older study, indicating that this varies across different medical specialties, and according to the different areas of knowledge (PATSOPOULOS; IOANNIDIS, 2009). We also considered that studies published there 5-10 years ago could provide researchers with the opportunity to look at the historical context of the subject researched and suggest guidance for later research (JYI, 2005). Thus, we include articles published between 2000-2010.

Key words were chosen, based on the Resolution 82/2008 of the Federal Council of Dentistry (CFO), which recognized the use of the following in dental health: Acupuncture, Homeopathy, Phytotherapy, Laser Therapy, Flower Therapy and Hypnosis

[1]The Lapacis (Laboratory of Alternative, Complementary and Integrative Practices in Health) is a theoretical and practical, oriented teaching, research and extension space. The researchers of Lapacis are graduate students that have published a variety of materials about Integrative and Complementary Practices. This Laboratory is located at the State University of Campinas - School of Medical Sciences in the Department of Health. Home Page: http://www.fcm.unicamp.br/laboratorios/lapacis/index.php.

(CFO, 2008). We use these modalities of CIP as keywords with intention of finding papers directly related to their use. All full versions of articles available online, published between 2000 and 2010, which contained the key words cited above in the title and / or abstract were included. We conducted the bibliographic search in three stages:

In the first stage, our objective was to find the papers by means a general search. We adopted the terms 'alternative therapy and/or dentistry'. We then read all the abstracts found in this search. This action provided us with the insight and directions to deepen the search for papers, because we were able to identify the vocabulary and the context of articles.

In the second stage, our objective was to extend the previous search and conduct a more specific search, in which we used the terms: 'acupuncture; homeopathy; phytotherapy; hypnosis; flower therapy; laser therapy'. In the same way as the first stage, this stage contributed to providing us with the insight to carry out one more search, considering the terms adopted by the Brazilian Federal Council of Dentistry. In this second stage, we also read all the abstracts found.

In the third stage, our objective was to conduct a more specific search, directed towards the terms related the oral health and CIP. Based on reading the articles found in the previous stages, we identified 'dental' as being a term more specific to interventions in dentistry. For this reason, we preferred to adopt 'dental' rather than 'oral' as keyword. The last search was performed using the keywords: 'dental acupuncture; dental homeopathy; dental phytotherapy; dental flower therapy; dental hypnosis; dental laser therapy'. In this third stage, we also read all the abstracts of articles.

On completion of the three stages, we tabulated all the references and eliminated the duplicated articles. After this, we started the search for the complete version of these texts, and then read the full content of all these papers.

In order to identify the 'positive' and 'negative' evidence, the criteria proposed by Pittler et al. (2000) were adopted, i.e., the positive results were those showing statistically significant values ($p < 0.05$) in favor of the CIP studied, when compared with the control group. No statistically significant differences in the intervention between the control group and CIP, and favorable results in the control group were classified as negative evidence. Studies that did not report the significance levels precisely, were classified according to the conclusion mentioned in the article. In the case of positive and negative outcomes observed in the same study, the result was considered directly connected to the main objective mentioned in the paper.

Results

The three stages that composed this systematic review resulted in 1616 references. After elimination of duplicates were analyzed 91 RCTs:

50 (55%) RCTs classified as positive: 20 (22%) of Phytotherapy; 16 (18%) of Laser Therapy, 12 (13%) of Acupuncture; 2 (2%) of Homeopathy; 0 (0%) Hypnosis and 0 (0%) Flower Therapy.

41 (45%) RCTs classified as negative: 27 (30%) of Laser Therapy; 11 (12%) of Phytotherapy; 2 (2%) of Acupuncture and 1(1%) of Hypnosis; 0 (0%) of Homeopathy and 0 (0%) Flower Therapy.

Table 1 shows the distribution of CIPs by main author, year of publication, and positive clinical outcome. Table 2 shows the distribution of CIPs by main author, year of publication, and negative clinical outcome.

Table 1. CIP distribution by author, year of publication, and positive clinical outcome.

CIP	Main Author	Year	Clinical Outcome
A	Sousa, R.A.	2007	Acupuncture promoted change in the activity of the masseter and temporal muscles
A	Simma, I.	2009	Decreased intensity of orofacial pain and craniomandibular disorders
A	Facco, E.	2008	A decrease in pain caused by migraines
A	Karst, M.	2007	A decrease in acute pre-surgical anxiety in dentistry cases
A	Smith, P.	2007	A decrease in orofacial pain intensity, as well as in the other signs and symptoms involving the temporomandibular joint
A	Schmid-Schwap, M.	2006	Decreased intensity of and sensitivity to pain located in the neck and in the muscles used for chewing
A	Pohodenko-Chudakova, I.O.	2005	The successful use of acupuncture as a post-surgical analgesic in oral and maxillofacial surgeries and as a way to stabilize pulse, arterial pressure, and cortisol levels during surgery
A	Rosted, P.	2003	Decreased onset time of local anesthetic
A	Somri, M.	2001	Decreased occurrence of emesis in children receiving dental work under general anesthesia
A	Lu, D.P.	2000	Decreased occurrence of gagging (gag reflex) during dental consultations
A	Kitade, T.	2000	A decrease in post-operative pain in cases of mandibular third molar extraction
A	Katsoulis, J.	2010	Decreased intensity of and sensitivity to pain in the muscles used for chewing
P	Rassameemasmaung, S.	2008	Decreased probing depths; decreased bleeding during probing; decreased gingival index values and decreased plaque levels with the use of a gel containing *Garcinia mangostana L.*
P	Nagata, H.	2008	Decreased probing depths; decreased values on the gingival index, decreased plaque levels with the use of chewing gum containing eucalyptus in cases of periodontitis
P	Rassameemasmaung, S.	2007	A decrease in volatile sulfur compounds after using mouthwashes containing *G. mangostana*
P	Takahashi, K.	2003	Slower bacterial growth and less plaque formation

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CIP	Main Author	Year	Clinical Outcome
P	Rieger, L.	2002	Improved scarring at periodontic surgical sites after the use of Aloe Vera
P	Muñoz, C.A.	2001	Lower gingival index levels, decreased depth of periodontal pockets after using plant-based food supplements including plants when treating periodontitis in patients receiving at-home care
p	Gedney, J.J.	2004	A decrease in perceived sensitivity to the intensity and discomfort of pain after using essential oils (administered nasally) made of *Lavandula angustifolia* and *Rosmarinus officinalis* at the onset of pain
P	Kim, K.S.	2009	Decreased need for opioid analgesics in patients who had undergone bilateral sagittal split osteotomy
P	Kritsidima, M.	2010	Decreased levels of anxiety in patients receiving dental work after the inhalation of lavender extract
P	Rodrigues, I.S.	2009	Gingivitis control after the use of a gel containing *Lippia Sidoides*
P	Yaegaki, K.	2008	Inhibited formation of bacterial plaque on tooth surfaces after the ingestion of pills containing polyphenol
P	Catalán, A.	2008	Decreased palatal inflammation *in vivo* and total inhibition of Candida Albicans *in vitro* after the use of *Melaleuca*
P	Shinada, K.	2007	Less plaque after the use of mouthwashes containing polyphenol
P	Menezes, S.M.	2006	Decreased amounts of microorganisms from dental plaque after the use of *Punica granatum*
P	Sastravaha, G.	2003	Significant improvement in pocket probing depth, attachment level, and gingival index after the use of *Centella asiatica and* Punica granatum extract
P	Bratel, J.	2005	Fewer occurrences of chronic aphthous ulcers after patients used herbal vitamin tablets
P	Khandare, A.L.	2004	Significant increase in the urinary excretion of fluoride after use of supplements containing *Tamarindus indicus*
P	Pai, M.R.	2004	Lower salivary bacteria levels after the use of a gel containing *Azadirachta indica*
P	Johansson, G.	2001	Decrease symptoms of dry mouth, decrease in dental plaque and bleeding on probing and decreased speech difficulties for patients with Sjögren's syndrome after the use of mouthwash containing Linseed extract
P	Al-Otaibi, M.	2003	Less bacterial plaque and gingivitis after the use of miswak (*Salvadora persica*)
Ho	Mousavi, F. (a)	2009	Decreases in pain and lesion sizes after the use of *Ignatia amara* when treating lichen planus
Ho	Mousavi (b)	2009	Decreased pain intensity and ulcer size when treating minor aphthous ulcers using homeopathic medication at 6C potency
L	Tortamano A.	2009	Low-level laser therapy (LLLT) provide control pain of patients after placement of their first orthodontic archwires Furthermore, the pain ceased much sooner and was even less intense compared with the control and placebo groups
L	Mazzetto, M.O.	2007	Better pain management in cases of temporomandibular disorder after the use of low-intensity lasers
L	Lopes, B.M.	2010	Control of the proliferation of microorganisms in cases of persistent periodontitis after the use of lasers
L	Sigusch, B.W.	2010	A decrease in symptoms of periodontitis and *F. nucleatum* infections after the use of photodynamic therapy
L	Lulic, M.	2009	Decrease in probing depth, significant clinical attachment level gain, and less bleeding during probing after the use of laser diode in the treatment of residual periodontal pockets
L	Zezell, D.M.	2009	The use of lasers reduced the occurrence of caries because it prevented the demineralization of tooth enamel *in vivo*
L	Ozcelik, O.	2008	Low-intensity laser therapy combined with an enamel matrix protein led to a reduction in gingival recession, pain, and edema in cases of intraosseous defects
L	Ting, C.C.	2007	The use of lasers was efficient in removing calculus and did not cause any visible morphological alterations to the root surface
L	Assaf, M.	2007	Decreased occurrence of dental bacteremia after the use of a diode laser
L	Godoy, B.M.	2007	The irradiated samples presented higher organization of the collagen fibrils in the extracellular matrix than the non-irradiated samples.
L	Liu, J.F.	2006	Less resistance from children to dental treatment with the use of Er:YAG lasers in cavity preparations when compared with the use of a motor
L	Youssef, M.N.	2006	Greater levels of resin flow when compared with conventional cavity preparations when Er:YAG lasers were used.
L	Crespi, R.	2006	Better fibroblast attachment to root surfaces after the use of Er:YAG lasers
L	Bergmans, L.	2006	A decrease in endodontic pathogens after the use of Nd:YAG lasers
L	Karlovic, Z.	2005	Less microinfiltration into the material used in retrograde fillings after the use of YAG lasers
L	Qadri, T.	2005	Decrease of gingival inflammation after the use of low-intensity lasers

Table 2. CIP distribution by author, year of publication, and clinical negative outcome.

CIP	Main Author	Year	Clinical Outcome
A	Michalek-Sauberer, A.	2007	Both Auricular Electroacupuncture and Auricular Acupuncture did not reduce pain intensity or analgesic consumption in a molar tooth extraction model of acute pain
A	Goddard, G.	2002	Both control group (acupuncture) and test group (sham acupuncture) reduced pain
P	Haffajee, A.D.	2009	All of the mouth rinses tested produced shifts in the composition of subgingival microbiota
P	Asokan, S.	2009	Both control group and test group promoted statistically significant reduction in the plaque and gingival indices
P	Southern, E.N.	2006	The effect of chlorhexidine mouthwash (control group) was statistically superior to placebo (test group) used on dental plaque
P	Lauten, J.D.	2005	No statistically significant differences were found between results of the test group (herbal mouthwash) and control group (placebo mouthwash) as regards gingival index, plaque index or relative abundance of either bacterial species.
P	Khalessi, A.M.	2004	Persica (control group) and placebo (test group) did not reduce dental plaque accumulation
P	George, J.	2009	In both control group (conventional dentifrice) and test group (herbal dentifrice) it was effective in the control of plaque and gingivitis
P	Pereira, S.L.	2010	The test gel containing *copaifera oil* did not prevent plaque formation and development of gingivitis
P	De Oliveira, S.M.	2008	The test dentifrice (*Aloe Vera)* did not show any additional effect on plaque/ gingivitis control compared with the fluoridated dentifrice
P	Jain, A.	2008	Cissus quadrangularis as a modulator in periodontal regenerative therapy showed no statistically significant intergroup difference
P	Asokan, S.	2008	In both control group (chlorhexidine) and test group (oil pulling) they reduced the S. mutans count in the plaque and saliva samples
P	Al-Teen, R.M.	2006	Both the Siwak and orthodontic toothbrushes presented a similar effect of plaque control in patients with fixed orthodontic appliances
Hy	Moore, R.	2002	Group therapy (GT) provided more favorable results than hypnotherapy (HT) in cases of dental anxiety treatment
L	Mummolo, S.	2008	Both surgical and laser treatment showed a clinically appreciable validity with the Friedman's test in cases of aggressive periodontitis.
L	Schwarz, F.	2001	Both control group and test group (laser) promoted a significant reduction of the gingival index. Plaque index remained nearly unchanged in both groups. The mean value of bleeding on probing decreased in both groups

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CIP	Main Author	Year	Clinical Outcome
L	Rotundo, R.	2010	The scaling and root planing alone was more effective than adjunctive use of Er:YAG laser
L	Venezian, G.C.	2010	In both groups (diode laser and placebo laser) the results revealed no statistically significant differences in the electromyographic activity
L	Katsoulis, J.	2010	The pain reduction was strongest with the blinded patients of the placebo group
L	Angelov, N.	2009	For all clinical parameters, all three groups (G1. scaling and root planing; G2. scaling and root planing + laser during 5 days; G3. scaling and root planing + laser during 10 days) reported statistically significant differences compared with baseline data
L	Polansky, R.	2009	The application of a single cycle of photodynamic therapy was not effective as an adjunct to ultrasonic periodontal treatment
L	Kamma, J.J.	2009	Bacterial counts were decreased with all three treatment modalities: 1. scaling and root planing alone; 2. diode laser treatment alone; 3. scaling and root planing combined with diode laser treatment
L	Ipci, S.D.	2009	All treatment forms resulted in significant improvement in discomfort caused by dentin hypersensitivity. Lasers in combination with NaF gel appeared to show better efficacy compared with either treatment modality alone
L	Caruso, U.	2008	Both test group (Diode laser + scaling and root-planing) and control group (scaling and root-planing alone) revealed no significant differences in reduction of periodontopathogens
L	Lai, S.M.	2009	No additional clinical benefit found with the use of the low-power He-Ne laser as an adjunct to non-surgical periodontal therapy
L	Braun, A.	2008	Values for relative attachment level, probing depths, Sulcus fluid flow rate and bleeding on probing decreased significantly after treatment in the control group (scaling and root planing)
L	Ribeiro, I.W.	2008	No statistically significant difference found between the study site (scaling and root planing combined with laser) and control site (scaling and root planing alone)
L	Kara, C.	2008	All treatments (non-surgical periodontal treatment procedures and laser applications) presented statistically significant decreases in the clinical index scores and volatile sulphur compound values
L	Dommisch, H.	2008	Both laser and conventional bur treatment removed caries in a similar manner. Laser treatment showed higher patient comfort than bur treatment.
L	De Andrade, A.K.	2008	Control site (scaling and root planing) and Test site (scaling and root planing + Nd:YAG dental laser) revealed improvements in the majority of clinical parameters and significant reduction in number of bacteria
L	Birang, R.	2008	No statistically significant difference found in the average rate of oxygen saturation between the test group (Nd:YAG laser) and the control group (no-treatment)
L	Derdilopoulou, F.V.	2007	In all groups (hand instruments, Er:YAG laser, sonic scalers and ultrasonic scalers) the amounts of Porphyromonas gingivalis, Prevotella intermedia, Tannerella forsythensis, and Treponema denticola were significantly decreased
L	De Oliveira, R.R	2007	Both groups (photodynamic therapy/ phenothiazine photosensitizer and photodynamic therapy/ scaling and root planing with hand instruments) revealed similar plaque index values
L	Andersen, R.	2007	The bleeding on probing results revealed significant improvement in all groups: Group 1 (photodisinfection alone), Group 2 (scaling and root planing alone), Group 3 (scaling and root planing + photodisinfection)
L	Kelbauskiene, S.	2007	No statistically significant difference in plaque levels before and after the treatment between the treated quadrants in cases of early and moderate periodontitis
L	Birang, R.	2007	No statistically significant difference found in Visual Analog Scale (VAS) score among the three groups in cases of dentin hypersensitivity
L	Schwarz, F.	2006	Laser failed to reestablish the biocompatibility of contaminated titanium surfaces, but was efficient in removing biofilms
L	Braun, A.	2006	The in vitro efficiency of hand instruments was statistically higher compared with the conventional ultrasonic system and the Vector -system with no difference between ultrasonic system and abrasive fluid; and abrasive fluid and Vector - system with polishing
L	Saltzman, B.	2005	When comparing the two groups, no statistically significant values were found. The laser-MTA pulpotomy (test group) showed reduced radiographic success rates compared with the formocresol-ZOE pulpotomy (control group)
L	Venancio, R.	2005	The results showed that Low Intensity Laser Therapy (LILT) was similar to the placebo effect in cases of temporomandibular disorders
L	Payer, M.	2005	Low-level laser therapy (LLLT) did not achieve a significant clinical benefit in cases of endodontic surgery

Discussion

We analyzed 91 papers published between 2000-2010 indexed in the PUBMED database. The merit of this paper consists in the presentation and discussion of various aspects of an underexplored theme in scientific literature: the use of various CIPs in oral health.

Laser therapy and Phytotherapy were the CIPs most tested. The majority of Laser therapy studies reported negative outcomes (ANDERSEN et al., 2007; ANGELOV et al., 2009; BIRANG et al., 2007, 2008; BRAUN et al., 2006, 2008; CARUSO et al., 2008; DE ANDRADE et al., 2008; DE OLIVEIRA et al., 2007; DERDILOPOULOU et al., 2007; DOMMISCH et al., 2008; IPCI et al., 2009; KAMMA et al., 2009; KARA et al., 2008; KATSOULIS et al., 2010; KELBAUSKIENE; MACIULSKIENE, 2007; LAI et al., 2009; MUMMOLO et al., 2008; PAYER et al., 2005; POLANSKY et al., 2009; RIBEIRO et al., 2008; ROTUNDO et al., 2010; SALTZMAN et al., 2005; SCHWARZ et al., 2001, 2006; VENANCIO et al., 2005; VENEZIAN et al., 2010), while the major part of studies about phytotherapy reported positive results (AL-OTAIBI et al., 2003; BRATEL et al., 2005; CATALÁN et al., 2008; GEDNEY et al., 2004; JOHANSSON et al., 2001; KIM et al., 2009; KHANDARE et al., 2004; KRITSIDIMA et al., 2010; MENEZES et al., 2006; MUÑOZ et al., 2001; NAGATA et al., 2008; PAI et al., 2004; RASSAMEEMASMAUNG et al., 2008, 2007; RIEGER; CARSON, 2002; RODRIGUES et al., 2009; SASTRAVAHA et al., 2003; SHINADA et al., 2007; TAKAHASHI et al., 2003; YAEGAKI et al., 2008). Acupuncture and Homeopathy studies presented positive results (DE SOUSA et al., 2007; FACCO et al., 2008; KARST et al., 2007; KATSOULIS et al., 2010; KITADE; OHYABU, 2000; LU et al., 2000; MOUSAVI et al., 2009b; POHODENKO-CHUDAKOVA, 2005; ROSTED;

BUNDGAARD, 2003; SCHMID-SCHWAP et al., 2006; SIMMA et al., 2009; SMITH et al., 2007; SOMRI et al., 2001), while Hypnosis presented a single negative result (MOORE et al., 2002). No papers on Flower Therapy were included because we found no RCT about this CIP.

The use of CIP was predominantly associated with the treatment of periodontal disease (ANDERSEN et al., 2007; ANGELOV et al., 2009; BRAUN et al., 2008; CARUSO et al., 2008; DE ANDRADE et al., 2008; DE OLIVEIRA et al., 2007, 2008; DERDILOPOULOU et al., 2007; GEORGE et al., 2009; JAIN et al., 2008; KAMMA et al., 2009; KELBAUNSKIENE et al., 2007; LAI et al., 2009; LOPES et al., 2010; MOMMOLO et al., 2008; MUÑOZ et al., 2001; NAGATA et al., 2008; OZCELIK et al., 2008; POLASNKSY et al., 2009; QADRI et al., 2005; RASSAMEEMASMAUNG et al., 2007; RIBEIRO et al., 2008; RIEGER et al., 2002; RODRIGUES et al., 2009; ROTUNDO et al., 2010; SASTRAVAHA et al., 2003; SCHWARZ et al., 2001; SIGUSCH et al., 2010; TING et al., 2007), different types of orofacial pain (DE SOUSA et al., 2007; FACCO et al., 2008; GEDNEY et al., 2004; GODDARD et al, 2002; KATSOULIS et al., 2001, 2010; KIM et al., 2009; KITADE; OHYABU, 2000; MAZZETTO et al., 2007; MICHALEK-SAUBERER et al. 2007; MOUSAVI et al., 2009a and b; POHODENKO-CHUDAKOVA, 2005; SCHMID-SCHWAP et al., 2006; SIMMA et al., 2009; SMITH et al., 2007; TORTAMANO et al., 2009; VENÂNCIO et al., 2005) and reduction in biofilm formation (AL TEEN et al., 2006; GEORGE et al., 2009; JOHANSSON et al., 2001; KHALESSI et al., 2004; MENEZES et al., 2006; OLIVEIRA et al., 2008; PAI et al., 2004; PEREIRA et al., 2010; SHINADA et al., 2007; SOUTHERN et al., 2006; TAKAHASHI et al., 2003; YEGAKI et al., 2008).

While reading and evaluating the papers it was clear to us that there were gaps in the design of the studies analyzed, and this problem directly affects the quality of RCT outcomes. This finding allowed us to perceive that these data may offer little reliability for recommending the clinical use of CIP in oral health. In this context, we think there is great difficulty in obtaining support in the literature to prove the possibilities for action in the field of CIP. We believe that the broader view for the planning and evaluation of CIP interventions is an important and decisive factor for the recognition of the effectiveness of these practices by the scientific community and society. We were given this impression, because when reading the papers, we noted that although some studies have failed to show statistical significance, they showed important clinical outcomes (ASSAF et al., 2007; BRATEL et al., 2005; CARUSO et al., 2008; DE OLIVEIRA et al., 2007, 2008; DE SOUSA et al., 2007; LU et al., 2000; MUMMOLO et al., 2008; RIBEIRO et al., 2008; RODRIGUES et al., 2009; SASTRAVAHA et al., 2003; SCHMID-SCHWAP et al., 2006; SMITH et al., 2007; PEREIRA et al., 2010; VENEZIAN et al., 2010). We also noted that few researchers have reported this type of finding, and we think that assigning the effects of CIP to purely numerical outcomes, may be biased with regard to planning and analysis, because the field of CIP needs to be studied from a broader point of view, incorporating data that go beyond quantitative parameters. Corroborating our impressions, Verhoef (2002, p. 275) reported that the RCT "[…] do not address why the intervention works, how participants are experiencing the intervention, and/or how they give meaning to these experiences". Thus, as a way for studies to be conducted, we suggest the incorporation of information from the reports of patients and team who will conduct the experiment. We think this posture would allow information to be captured is in accordance with the principles of the CIP and similar practices that assume the same view of health.

Another obstacle observed in the papers analyzed refers to the establishment of placebo procedures and difficulties in blinding in studies on complementary and alternative treatments. Nahin and Straus (2001) and Tamayo et al. (2002), cite the problem of placebo use in research on CIP. They also reported other problems, such as difficulties with randomizing and retaining patients, and in identifying appropriate placebo interventions. Baranowsky et al. (2009, p. 3) reports that "RCTs are particularly difficult to perform in many categories of complementary and alternative medicine". This occurs because "[…] an individualized approach to the patient in diagnosis and therapy is often already part of the healing process itself" (BARANOWSKY et al., 2009, p. 3).

The 'split mouth design' was used in some researches analyzed in this review (ASSAF et al., 2007; BRAUN et al., 2008; CARUSO et al., 2008; DERDILOPOULOU et al., 2007; DE OLIVEIRA et al., 2007; KAMMA et al., 2009; KELBAUSKIENE; MACIULSKIENE, 2007; LAI et al., 2009; LOPES et al., 2010; MUMMOLO et al., 2008; OZCELIK et al., 2008; PEREIRA et al., 2010; QADRI e tal., 2005; RIBEIRO et al., 2008; RODRIGUES et al., 2009; ROTUNDO et al., 2010; SALTZMAN et al., 2005; SCHWARZ et al., 2001; ZEZELL et al., 2009). We detected the 'split mouth design' as complicating factor to planning, conducting and analyzing the

result of RCTs, especially in studies evaluating the use of CIP. Sutherland (2001, p. 376) related that "[…] although these designs require smaller sample sizes to detect a treatment effect, their use is fraught with peril and may be inappropriate, unless certain criteria are met". Moreover the subject's expectation about the side treated with a test intervention could be higher and may also introduce bias in scores of evaluations made by these subjects (HUJOEL; DEROUEN, 1992; LESAFFRE et al., 2009).

Conclusion

There are various obstacles to searching, analyzing and establishing the validity and reliability of CIP outcomes in oral health. The small difference between positive and negative results characterizes the studies analyzed as weak evidence and low potential for clinical application, considering the model of evidence based dentistry. We think that a broader view in the planning and evaluation of CIP interventions is an important and decisive factor for the recognition of the effectiveness of these practices by the scientific community and society. To obtain more adequate data within the field of CIP, we suggest the incorporation of qualitative data.

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