Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/jptcp.v29i04.5011

DENTAL HEALTH EDUCATION: A LITERATURE REVIEW, DENTAL ASSISTANT

Seham ageel Al-Enazi[1*], Amirah Mohammed Alaqidi[2], Aisha Subyani Ali Khairallah[3], Wafa muslih Alrashdi[4], Ahlam Hamoud Al-Ruwaili[5], Ebtisam Saeed AlQahtani[6], Majidah Khalaf Alanazi[7], Kholood khulaf alanezi[8], Ali hamad hussin al qurayshah[9],Hadi Naji Nasser Al-yami[10]

[1*]Dental assistant, Riyadh Second Health Cluster Riyadh
[2]Dental assistant,Riyadh Second Health Cluster Riyadh
[3]Health Education Specialist, Riyadh Second Health Cluster Riyadh
[4]Technician- nursing, Riyadh Second Health Cluster Riyadh
[5]Technical nursing , Riyadh Second Health Cluster Riyadh
[6]Dental assistant, Riyadh Second Health Cluster Riyadh
[7]Nursing technician Northen Nazim Health Center Riyadh
[8] Nursing technician Southern Nazim Health Center Riyadh
[9]Hospital management specialist Najran King Khalid hospital
[10]Management of Hospitals and Health King Khaled Hospital Najran

***Corresponding Author:** Seham ageel Al-Enazi
*Riyadh Second Health Cluster Riyad

Abstract
A fundamental redesign of health education practices has been necessary but challenging with regard to improving the public's competence and influencing their decision making. The aim of this study was to review the literature on oral health education and analyze its subjects, methodological strategies and forms of assessment. The following electronic databases were used to search the literature from 2000 to 2011: the Scientific Electronic Library Online (SCIELO), Brazilian Library of Dentistry (BBO), Latin-American and Caribbean Center on Health Sciences Information (LILACS), biomedical journal literature of the National Library of Medicine (MEDLINE/PubMed) and the CAPES Portal. The search was restricted to articles in English and Portuguese. The selected articles (61) were obtained in full and analyzed. The groups that received the most oral health education consisted of those in pre-school and grade school, followed by health professionals and the elderly. Educational leaflets were the most commonly used tool, followed by lectures/verbal instruction/posters and demonstrations using macro models. The questionnaire was the most cited evaluation tool, followed by a combination of clinical examination and questionnaire and clinical examination alone.

Keywords: Health education; health education; dental; health promotion education

Introduction
Health education can contribute to the promotion of health at both the individual and population levels, as it works within newly created concepts and technologies, as well as in the real conditions in which such concepts and technologies are understood and applied [1]. Health education is

considered an opportunity for experts to use a wide range of experiences and resources promote attitudes and practices that will be beneficial to individuals' well- being, family and community. Thus, each person has the social responsibility for their own health and the health of those around them. Health education can also be understood as any opportunity for learning that will lead to voluntary behavioral adaptations that lead to health improvements [2]. It comprises actions that allow for the acquisition of knowledge about the health-disease process, including risk and health protection factors, as well as allowing users to change habits and supporting them on their quest for autonomy [3].

Every health action must be understood as an educational action [4]. The process of promotion–prevention–cure– rehabilitation is also a pedagogical process in the sense that both health professionals and patients/communities learn and teach. Such concepts can effectively change the direction and outcomes of health work, transforming subjects into citizens and co-participants in the health construction process.

Thus, to promote health, people must be provided with the tools necessary to identify their aspirations, favorably modify their environments and control the determining factors for their health [5]. Whichever aspect is considered, the difficulties of implementing educational practices focused on health promotion and incorporating educational actions into daily academic and professional practice are abundant.

Health education projects are usually part of an approach entailing the transmission of specialized knowledge from experts to the lay population, whose knowledge on how to live is poorly valued and/or ignored in such transmission processes. One assumes that for laymen to learn what they need, they must unlearn a great deal of what had previously been learned in daily life. The education process is often limited to telling patients what they should do, instead of giving them the knowledge to make their own decisions [6,7]. Traditionally, health education has been a controlling instrument of a dominant knowledge stance used to make individuals responsible for reducing the risks to their health. "Hegemonic" health education has contributed little towards creating comprehensive healthcare and has had little effect on promoting health generally [4,8]. Despite recognizing the importance of educational actions, in the health field, one still observes a general emphasis on care centered on the individual and focused on clinical activities, especially those of a curative nature; such a focus overemphasize procedures and techniques as the only option for solving oral health problems [9].guaranteeing effective learning and the transformation of life attitudes and habits. Experience shows that transmitting information on body functioning and describing disease characteristics, in addition to a set of hygiene habits, are not sufficient to induce individuals to develop a healthy lifestyle. It is paramount to "educate" on health, taking into account all of the aspects involved in the formation of habits and attitudes that occur in an individual's day-to-day life [10].

Regarding such questions, the present study aimed to review the literature on "oral health education" and analyze its subjects, methodological strategies and forms of assessment.

Methods

A literature review was conducted using the following Brazilian and international databases: Scientific Electronic Library Online (SCIELO), Brazilian Dental Library (Biblioteca Brasileira de Odontologia – BBO), Latin- American and Caribbean Health Sciences Literature (Literatura Latino-Americana e do Caribe em Ciências da Saúde – LILACS), biomedical journal literature of the National Library of Medicine (MEDLINE/PubMed) and the Coordination of Improvement of Higher Education Personnel (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – CAPES) Portal. The search started with the identification of controlled indexing terms in the BIREME (Biblioteca Regional de Medicina/Regional Library of Medicine) database (Descritores em Ciências da Saúde/ Health Sciences Indexing Terms), taking into consideration the keywords most often cited in the reference literature. The inclusion criteria were as follows: publication in English or Portuguese, description and/or assessment of "oral health education" methods. Literature review-type papers or those that did not conform to these criteria were excluded.

An initial search was performed using the search terms "dental health education" and "oral health

promotion" plus the Boolean operator [AND] in the MEDLINE/PubMed and CAPES databases. Six-hundred eighty-nine articles were found. After limiting the search by time period (2000 to 2011), 452 papers remained. Selection was then performed by title and abstract according to the pre-established criteria; subsequently, 77 studies remained. These articles were obtained in full and analyzed. After reading and excluding duplicates, as well as those that did not conform to the inclusion criteria, a final selection comprising 34 papers was obtained.

In the SCIELO database, a search was performed using only the indexing term "oral health education" because when the term "oral health promotion" was included, no results were found. This search yielded 8 papers accessed via CAPES and 27 papers obtained directly from the SCIELO database. Five papers were selected from the above search, of which 1 was a duplicate from the PubMed search, leaving a total of 4 papers.

The next stage was to search for papers with the terms "*educação em saúde bucal*"/"oral health education" in the title in the BBO, LILACS and Wiley Online Library databases. Limiting the time period to 2000-2011 initially yielded 19, 28 and 31 papers in these respective databases, and 17, 25 and 25 were selected. After obtaining and reading the full articles, excluding duplicates and those that did not conform to the inclusion criteria, 5 papers were selected from BBO (all were duplicated in LILACS), 9 articles from LILACS (1 of which was duplicated in SCIELO) and 19 from Wiley (4 of which were duplicated in PubMed).

From the final selection of publications, accounting for all databases accessed and excluding duplicates, a total of 61 papers were obtained and analyzed (Table 1).

Table 1. Number of papers selected from each database.

Database	Final Selection
PubMed	34
SCIELO	4
BBO	–
LILACS	8
Wiley	15
Total	61

Results and Discussion

The selected articles allowed for the demarcation of the theme "oral health education" into different contexts, which were analyzed according to the study population, the educational method used and the forms of assessment of the educational practices performed (Table 2).

The study populations in the oral health education literature

In the 61 papers analyzed, the groups that participated in/received oral health education activities/instruction most frequently were pre-school and grade-school children of different ages (22 papers – 36.1%) [11-32], followed by health professionals (6 papers – 9.8%) [33-38], the elderly (5 papers – 8.2%) [39-43], parents (5 papers – 8.2%) [44-48], adolescents (3 papers – 4.9%) [49-51] and pregnant women (3 papers – 4.9%) [52-54]. From the 22 papers that cited groups of school children participating in educational activities, 2 also included mothers and teachers [24] or teachers [31]. Of the papers in which the parents were the recipients of educational activities, 2 involved fathers/ mothers and babies [45,48]. The remaining 17 papers reported educational activities in different groups, such as women [55,56], primary care service users [57,58], individuals with psychiatric disorders [59,60], children and adults [61], children and young adults with Down Syndrome [62], physical education teachers [63], teachers and parents [64], adults and the elderly [65], children with hemophilia [66], the community in general [67], individuals wearing fixed orthodontic appliances [68], patients with periodontitis [69], male drug addicts [70] and smokers [71].

Schools were the places most often used for educational activities, as they represent a social environment in which the children are in a favorable age group to receive knowledge, acquire habits and strengthen pre-learned preventative care to help them to improve their health, self-esteem, behavior and life skills [72,73].

Another group that was highly represented in oral health education activities was the elderly. This group has been receiving special attention in recent years because the population of Brazil, as in other countries, is aging. Data from the Brazilian Ministry of Health show that more than 3 million (15%) elderly Brazilians need full upper and lower dentures and that 4 million (23%) need partial dentures in one of the arches [74]. The need for curative treatment in the elderly, related mainly to edentulism, tooth loss, abrasion/ erosion and periodontal disease, remains a reality and, therefore, must be prioritized.

In a much lower number of papers, adolescents were also studied in both school and extracurricular environments. Adolescents have unique attitudes and characteristics, as well as distinct needs, and adolescence is often considered a period of increased risk of dental caries as a result of incomplete plaque control and decreased attention to tooth brushing. An educational proposal to reduce the incidence of caries and periodontal disease in this group must take into consideration the need to work with the stimulation and reinforcement components of oral health implementation because these components can be more easily visualized [28].

Silveira Filho et al. [22] showed that caries indices tend to increase in adolescents. The lack of oral health education activities at middle schools, teenage truancy and inadequate guidance of this group may contribute to an increase in caries during adolescence. The authors highlighted the need to pursue new knowledge and to develop different practices targeting adolescents, using new technology and health education methods.

Pregnant women were also the subjects of oral health education activities. During pregnancy, health education is an important strategy to promote oral health, including oral health actions specified by the Women's Healthcare Program (Programa de Atenção à Saúde da Mulher), according to the current National Oral Health Policy (Política Nacional de Saúde Bucal) Guidelines [2].

The scarce participation of teachers in oral health education activities was also highlighted [24,31,63,64]. According to Sá and Vasconcelos [73], teachers are the best promoters of educational actions because they are familiar with methods of educating and motivating school children and, therefore, should be trained to do so. Studies that assessed elementary school teachers showed that the majority did not have enough specific knowledge to engage in an oral health education initiative with their students. Therefore, the adoption of new strategies and continuous training in a multidisciplinary effort involving dental surgeons and elementary school teachers should be encouraged [75].

Table 2. Selected papers on oral health education.

Author(S)/Year	Country	Population	Methods	Assessment
Bardal (2011)	Brazil	Patients undergoing orthodontic treatment (average age: 17 years)	Lectures, individual verbal guidance and macro models	Clinical examination (orthodontic plaque and gingival bleeding indices)
Torres, de Paula, Sousa et al. (2011)	Brazil	Users of a family health unit	Comic books	Not described
Gaio, Moysés, Businelli et al. (2010)	Brazil	School children (2 to 19 years old)	Not described	Clinical examination (oral health epidemiological assessment) and questionnaire
Knevel, Neupane, Shressta et al. (2010)	Nepal	Female farmers	Lectures, posters	Questionnaire, observation, interview
Meyer, Geurtsen, Günay (2010)	Germany	Adolescents (13 to 14 years old) Oral health care program	Not described	Clinical examination (DMFT, hygiene index, papillae and periodontal bleeding, number of sealed pits and fissures), *S. mutans* and *Lactobacillus* concentrations in saliva, questionnaire
Roberts-Thomson, Slade, Bailie et al. (2010)	Australia	Pre-school children (18 to 47 months old)	Not described	Clinical examination (plaque index, gingival index), interview
Siqueira, Jardima, Sampaio et al. (2010)	Brazil	Mothers and babies (0 to 48 months old) at daycare centers	Lectures, posters, leaflets, videos, coloring books, macro models, flip-charts	Clinical examination (DMFT, presence of active white spot lesions)

Almomani, Williams, Catley et al. (2009)	United States	Adults with psychiatric disorders	Motivational interview, lectures, leaflets, Post-It notes, weekly phone calls	Clinical examination (plaque index), questionnaire
Farias, Souza, Ferreira (2009)	Brazil	3rd- and 4th-grade school children (7 to 15 years old)	Descriptive classes using chalk and blackboards (lectures), painting-by-numbers, macro models and dynamics with competitive games	Clinical examination (plaque and bleeding indices), questionnaire
Frazão, Marques (2009)	Brazil	Community Health Agents (Agentes Comunitárias de Saúde – ACS)	Movie from the Ministry of Health with the ACS	Interviews (before and after)
		'Housewives' (25 to 39 years old)	Not described for the housewives	
Garbin, Garbin, Santos et al. (2009)	Brazil	Pre-school children (5 to 6 years old)	Role-play, painting-by-numbers, audiovisual resources, music, play activities	Parental questionnaire
Hakuta, Mori, Ueno et al. (2009)	Japan	Elderly	Not described	Before-and-after clinical examinations (DMFT, organoleptic and tongue dryness exams, tongue-coating score), questionnaire
Jönsson, Ohrn, Oscarson et al. (2009)	Sweden	Patients with periodontitis	Individual guidance	Clinical examination (plaque and bleeding indices, probing depth), questionnaire
Munoz, Touger-Decker, Byham-Gray et al. (2009)	USA	Nurses	Seminars with discussions, lectures, videos and practical activities	Questionnaire (before and after)
Saied-Moallemi, Virtanen, Vehkalahti et al. (2009)	Iran	Pre-adolescent school children (9 years old)	Puzzles, macro models, posters, leaflets	Clinical examination (plaque and bleeding indices)
Samson, Berven, Strand (2009)	Norway	Institutionalized elderly	Case discussions, leaflets	Clinical examination (plaque index, mucosal plaque index)
Tolvanen, Lahti, Poutanen et al. (2009)	Finland	5th- and 6th-grade school children (11 to 12 years old)	Videos, slides, theater, posters	Questionnaire (before and after 3 and 4 years)
Yang, Sue, Warnakulasuriaya et al. (2009)	Taiwan	Aboriginal adolescents	Lectures, theater, small group discussions	Questionnaire (pre- and post-intervention)
Yazdani, Vehkalahti, Nouri et al. (2009)	Iran	Adolescents (15 years old)	Leaflets, videos, photographs, macro models	Clinical examination (plaque and gingival bleeding indices, index of treatment needs), questionnaire

Continue

Table 2 (continuation)

Author(S)/Year	Country	Population	Methods	Assessment
Knevel, Neupane, Shressta et al. (2008)	Nepal	School children (5 to 12 years old)	Individual instructions and technical demonstrations	Clinical examination (community periodontal and plaque indices) observation, questionnaire
Livny, Vered, Slouk et al. (2008)	Israel	School children (1st grade)	Guidance using macro models	Clinical examination (plaque index), interview
Plutzer, Spencer (2008)	Australia	Pregnant women	Information rounds, printed material, additional telephone consultation	Clinical examination, questionnaire
Antonio, Kelly, Valle et al. (2007)	Brazil	School children	Orientation program for 6 months	Clinical examination (bleeding and plaque indices)
Katsman (2007)	Dominican Republic	Children and adults	Lectures, macro model demonstrations	Questionnaire
Kabil, Alfy, Metwalli (2007)	Egypt	Children with hemophilia (6 to 12 years old)	Macro model demonstrations, verbal instructions	Clinical examination (plaque and DMFT indices)
Slaughter, Evans (2007)	United States	Elderly	Songs, leaflets	Questionnaire (before and after)
Almomani, Brown, Williams (2006)	United States	Individuals with psychiatric	Lectures, posters with images, and leaflets	Clinical examination (plaque index before and after)

		disorders		
Carvalho, Mesas, Andrade (2006)	Brazil	Elderly (60 to 74 years old)	Slides, macro models, leaflets	Questionnaire
Chapman, Copestake, Duncan K. (2006)	United Kingdom	School children (7 to 8 years old)	Stories, poems, demonstrations	Questionnaire (before and after)
Holan, Cohenca, Brian et al. (2006)	Israel	Physical Education teachers	Seminars, leaflets, slides, posters	Questionnaire (before and after)
Kasila, Poskiparta, Kettunen et al. (2006)	Finland	School children (11 to 13 years old)	Motivational interview	Focus group
Mårtensson, Söderfeldt, Andersson et al. (2006)	Sweden	Adults and elderly (50 to 75 years old)	Newspaper, radio and television campaigns; leaflets	Questionnaire (before and after)
Alsada, Sigal, Limeback et al. (2005)	Canada	Pregnant women	Videos (audiovisual tool - DVD)	Questionnaire (before and after)
Cruz, Roldós, Puerta et al. (2005)	United States	Pregnant immigrants	Leaflets, products with messages, posters, gifts (pocket mirrors, magnets with the project name), workshops in waiting rooms	Questionnaire (before and after)
Silveira Filho, Medeiros, Justo et al. (2005)	Brazil	School children (8th grade)	Problematization of the thematic, kiss dynamic, group discussion	Not described
Albert, Anluwalia, Ward et al. (2004)	United States	Smokers	Lectures, leaflets, posters	Not described
Alves, Volschan, Haas (2004)	Brazil	Parents	Focus groups, leaflets, flip- charts, posters, macro models, bingo, mirrors, experiments for simulation and theater	Focus group
Ferreira, Morano Junior, Meneghim et al. (2004)	Brazil	Adult basic health unit users	Group discussion, lectures, compositions, collages, drawing	Not described
Mariño, Calache, Wright et al. (2004)	Australia	Elderly	Discussions, demonstrations, theater, exercises and leaflets	Questionnaire (before and after)
Pereira, Freire (2004)	Brazil	Parents of babies	Lectures and educational material	Clinical examination (DMFT, interproximal radiographs, caries risk assessment), questionnaire
Petersen, Peng, Tai et al. (2004)	China	School children, mothers, teachers	Puppet shows, slides, macro models	Clinical examination in school children (DMFT, DMFS, community periodontal index), questionnaire
Vanobbergen, Declerck, Mwalili et al. (2004)	Belgium	School children (7 years old)	Not described	Clinical examination (DMF, plaque, bleeding and defective fillings indices), yearly parental questionnaire

Continue

Table 2 (conclusion)

Author(S)/Year	Country	Population	Methods	Assessment
Aquilante, Almeida, Martins de Castro et al. (2003)	Brazil	Pre-school children (6 years old)	Lectures, macro models, posters, puppets, scavenger hunt, audiovisual resources	Clinical examination (plaque index), interview
Paulsson, Soderfeldt, Nederfors et al. (2003)	Sweden	Nurses	Slides, video, leaflets	Questionnaire

Rong, Bian, Wang et al. (2003)	China	Teachers and parents of pre-school children (3 years old)	Videos supplemented with photographs	Clinical examination of children (DMFS), parental questionnaire
Saliba, Pereira, Moimaz et al. (2003)	Brazil	Pre-school and school children	Previous knowledge evaluation, meetings with dynamic methods, slides, videos, puppets, flip-charts,macro models, learning reinforcement	Clinical examination (oral hygiene index), questionnaire
Shyama, Al-Mutawa, Honkala et al. (2003)	Kuwait	Children and young adults with Down syndrome (11 to 22 years old)	Leaflets, videos, cartoons, posters, songs, painting	Clinical examination (plaque and bleeding indices)
Van Der Sanden-Stoeling, Koelen, Hielkema-De Meij (2003)	Holland	Parents of children aged 0 to 4 years old	Poster, leaflets, TV messages	Not described
Wårdh, Hallberg, Berggren et al. (2003)	Sweden	Nursing assistants	Verbal guidance	Interview
Ribeiro, Oliveira, Zambolin et al. (2002)	Brazil	Male drug addicts (average age: 29 years)	Dynamic methods, lectures, posters, macro models, copying games, scavenger hunt, crosswords	Clinical examination (DMFT, plaque – PHP and gingival indices)
Toassi, Petry (2002)	Brazil	School children	Lectures, macro models, audiovisual resources	Clinical examination (visible plaque and gum bleeding indices)
Frenckel, Harvey, Needs (2002)	United Kingdom	Nurses	Verbal instructions, macro model demonstrations	Questionnaire (before and after)
Frencken, Borsum-Andersson, Makoni et al. (2001)	Zimbabwe	Teachers and school children	Lectures; competitions using theater, music and recitals; instructive coloring books	Clinical examination (DMFT, plaque index), interview
Paulsson, Söderfeldt, Fridlund et al. (2001)	Sweden	Nurses	Slides, videos, summary	Questionnaire
Tai, Du, Peng et al. (2001)	China	School children (12 years old)	Lectures, leaflet, posters	Clinical examination (DMFT, community periodontal index of treatment needs), questionnaire
Tomita, Pernambuco, Lauris et al. (2001)	Brazil	Adolescent school children (12 to 16 years old)	Lectures, posters, macro models, pedagogical games by means of scavenger hunts and competitions, slides, association to TV programs and presenters, pedagogical workshops	Clinical examination (DMFT, plaque index), questionnaire, assessment of drawings done by students during workshops
Sgan-Cohen, Mansbach, Haver et al. (2001)	Israel	Parents of children aged 6 to 12 months	Macro models, videos, images and slides, posters, leaflets	Interview before and after
Makuch, Reschke (2001)	Germany	Pre-school children (3 to 5 years old)	Control group: verbal instruction; experimental groups: games and exercises; theater and puppets	Semi-structured interview, observation of brushing skills
Watson, Horowitz, Garcia et al. (2001)	United States	Overall community	Leaflets, small group sessions, classroom activities (use of games, music, posters, videos, TV/radio broadcasts)	Questionnaire
Hawkins, Zanetti, Main et al. (2000)	Canada	1st-grade school children (5 to 7 years old)	Dynamic methods, small group discussions, individual verbal guidance	Interview (before and after)
Isaksson, Paulsson, Fridlund et al. (2000)	Sweden	Elderly care nurses	Not described	Clinical examination (plaque index, mucosal plaque index, mucosal friction index, mucosal condition)

Methodological strategies in oral health education literature

Regarding the proposed methodological strategies, 6/61 (9.8%) papers did not describe the educational methods used. Of the 55 papers that described their educational methods, educational leaflets (written guidance) were the most common resource, followed by lectures/verbal instruction (spoken guidance), posters and demonstrations using macro models.

In most of the studies analyzed, these methodological resources were linked to "traditional" health education practices, without knowing the needs of their target population. Few studies took into account the pre- existing knowledge of the groups about the subject in question. In addition, questions on oral health were generally isolated from the context of general health, seeking to modify behavior and lifestyle and focusing on guidelines of oral hygiene skills, changes to "inadequate" eating habits and encouragement of regular dental check-ups.

It is important to understand that talking about oral health education practices is not sufficient nor does it guarantee the quality of health promotion and disease prevention strategies. Models based on unidirectional, dogmatic and authoritarian communication practices focusing on information transmission should be replaced by models in which discussion and reflection are enhanced by effective communication and problematization of oral health themes, building strategies based on population-wide experiences [76].

Assessment tools in oral health education literature

Five (8.2%) of the selected papers did not report whether an educational activity/program assessment actually occurred or how it was performed. Of the 56 papers that described an assessment method, questionnaires were most commonly used, followed by a combination of clinical examination and questionnaire and clinical examination alone. Few studies used an approach centered on the analysis of an individual's subjective situation, such as interviews and focus groups. A questionnaire used to assess oral health education activities may provide information regarding knowledge and habits [29]. However, the questionnaire may not provide actual information regarding improvement of an individual's health condition. Vanobbergen et al. [23] used a questionnaire and clinical examination to assess a school-based oral health education program, which consisted of yearly 1-hour educational sessions. After 6 years, the authors assessed the program and its outcomes based on the responses to the questionnaires and found improvements in the reported eating habits and adequate use of fluoride toothpaste. However, no significant reduction in the prevalence of dental caries was observed.

Advancements and challenges in oral health education

Despite the recognition of the importance of health education in healthcare practices, its application and significance are still limited, often failing to make sense to the target groups or improve their health and quality of life [1].

Our review of the literature on oral health education revealed few studies that described the methods used and/ or the way in which the educational actions developed were assessed, and they generally used traditional educational practices, i.e., focusing on school children (pre-school and grade-school ages) and teaching with leaflets, lectures and posters, without much attention to the groups' pre-existing knowledge.

Effective health education does not occur in a manner that is abstract, punitive, isolated and disjointed from the reality and the needs of the population. It must involve training health professionals with regard to the development of practices and consent among the subjects, based on a recognition and respect of their autonomy, individuality and degree of trust of their teachers. It is necessary to overcome the limited model of information transmission that aims solely at behavioral changes and to move towards a cooperative procedural health education model that is open to dialogue and allows people to make their own decisions about their daily life habits and attitudes. This translates into the establishment of a relationship based on trust and empathy between the health professional/team and the individual, encouraging questions, information and listening.

Conclusions

This literature review aimed to identify trends in both the Brazilian and international literature from 2000 to 2011 on oral health education and analyzed the subjects, methodological strategies and forms of assessment. In the 61 papers analyzed, we found the following:

• pre-school and grade-school children, followed by health professionals and the elderly, were the groups that most often participated in educational activities/ programs;

• educational leaflets were the most commonly used method of instruction, followed by lectures/verbal instruction, posters and demonstrations using macro models;
• of the assessment modalities described, the questionnaire was the most prevalent, followed by the combination of questionnaire and clinical examination and clinical examination alone.
It is important to rethink the educational aspects that remain challenging for health/oral health promotion so that new models of education and intervention can be developed that will maximize the autonomy and self-respect of individuals and populations.

References

1. Pauleto ARC, Pereira MLT, Cyrino EG. Saúde Bucal: uma revisão crítica sobre programações educativas para escolares. Ciênc Saúde Colet 2004;9:121-30.
2. Reis DM, Pitta DR, Ferreira HMB, de Jesus PMC, Moares MEL, Soares MG. Educação em saúde como estratégia de promoção de saúde bucal em gestantes. Ciênc Saúde Colet 2010;15:269-76.
3. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Coordenação Nacional de Saúde Bucal. Diretrizes da Política Nacional de Saúde Bucal. Brasília (DF): Ministério da Saúde; 2004.
4. Albuquerque PC, Stotz EN. A educação popular na atenção básica à saúde no município: em busca da integralidade. Interface Comunic, Saúde, Educ 2004;8:259-74.
5. International Conference for Health Promotion, 1, 1986 [Cited 2012 July 31], Ottawa. Carta de Ottawa [Ottawa letter]. Available at: http://www. saudepublica.web.pt/05-PromocaoSaude /Dec_Ottawa.htm.
6. Meyer DEE, Mello DF, Valadão MM, Ayres JRCM. "Você aprende. A gente ensina?" Interrogando relações entre educação e saúde desde a perspectiva de vulnerabilidade. Cad Saúde Pública 2006;22: 1335-42.
7. Souza IPMA, Jacobina RR. Educação em saúde e suas versões na história brasileira. Rev Baiana Saúde Pública 2009;33:618-27.
8. Freire P. A concepção "bancária" da educação como instrumento da opressão: seus pressupostos, sua crítica. In: Freire P. Pedagogia do oprimido. Rio de Janeiro: Paz e Terra; 2005. p. 65-87.
9. Guterman N. O cirurgião-dentista como educador em saúde bucal: explorações em torno de uma prática. Rev Abeno 2005;5:115-24.
10. Brasil. Parâmetros curriculares nacionais: meio ambiente, saúde (9). Secretaria de Educação Fundamental. Brasília (DF): Ministério da Educação; 1997.
11. Gaio DC, Moysés SJ, Businelli JC, França BHS, Moysés ST. Health- promoting schools and their impact on the oral health of mentally disabled people in Brazil. Health Promot Int 2010;25:425-34.
12. Roberts-Thomson KF, Slade GD, Bailie RS, Endean C, Simmons B, Leach AJ, Raye I, Morris PS. A comprehensive approach to health promotion for the reduction of dental caries in remote Indigenous Australian children: a clustered randomised controlled trial. Int J Dent Hyg 2010;60:245-9.
13. Tolvanen M, Lahti S, Poutanen R, Sepp L, Pohjola V, Hausen H. Changes in children's oral health-related behavior, knowledge and attitudes during a 3.4-yr randomized clinical trial and oral health-promotion program. Eur J Oral Sci 2009;117:390-7.
14. Saied-Moallemi Z, Virtanen JI, Vehkalahti MM, Tehranchi A, Murtomaa H. School-based intervention to promote preadolescents' gingival health: a community trial. Community Dent Oral Epidemiol 2009;37:518-26.
15. Farias IA, Souza GCA, Ferreira MAF. A health education program for Brazilian public schoolchildren: the effects on dental health practice and oral health awareness. J Public Health Dent 2009;69:225-30.
16. Garbin C, Garbin A, Santos K, Lima D. Oral health education in schools: promoting health agents. Int. J Dent Hyg 2009;7:212-6.
17. Livny A, Vered Y, Slouk L, Sgan-Cohen HD. Oral health promotion for schoolchildren: evaluation of a pragmatic approach with emphasis on improving brushing skills. BMC Oral

Health 2008;8:1-6.
18. Knevel RJM, Neupane S, Shressta B, Mey L. Buddhi Bangara Project on oral health promotion: a 3- to 5-year collaborative programme combining support, education and research in Nepal. Int J Dent Hyg 2008;6:337-46.
19. Antonio AG, Kelly A, Valle DD, Vianna RB, Quintanilha LE. Long-term effect of an oral health promotion program for schoolchildren after the interruption of educational activities. J Clin Pediatr Dent 2007;32:37-42.
20. Kasila K, Poskiparta M, Kettunen T, Pietilä I. Oral health counselling in changing schoolchildren's oral hygiene habits: a qualitative study. Community Dent Oral Epidemiol 2006;34:419-28.
21. Chapman A, Copestake SJ, Duncan K. An Oral health education programme based on the National Curriculum. Int J Paediatr Dent 2006;16:40-4.
22. Silveira Filho AD, Medeiros IY, Justo CMP, Bicudo Pereira IMT, Pelicioni MCF. O beijo como mobilizador para educação em saúde: ênfase na saúde bucal de adolescentes. Relato de uma experiência. Rev Bras Crescimento Desenvolv Hum 2005;15:57-68.
23. Vanobbergen J, Declerck D, Mwalili S, Martens L. The effectiveness of a 6-year oral health education programme for primary schoolchildren. Community Dent Oral Epidemiol 2004;32:173-82.
24. Petersen PE, Peng B, Tai B, Bian Z, Fan M. Effect of a school-based oral health education programme in Wuhan City, Peoples Republic of China. Int Dent J 2004;54:33-41.
25. Saliba NA, Pereira AA, Moimaz SAS, Garbin CAS, Arcieri RM. Programa de educação em saúde bucal: a experiência da Faculdade de Odontologia de Araçatuba – UNESP. Odontol Clín Cient 2003;2:197-200.
26. Aquilante AG, Almeida BS, Martins de Castro RF, Xavier CRG. A importância da educação em saúde bucal para pré-escolares. Rev Odontol UNESP 2003;32:39-43.
27. Toassi RFC, Petry PC. Motivação no controle do biofilme dental e sangramento gengival em escolares. Rev Saúde Pública 2002;36:634-7.
28. Tomita NE, Pernambuco RA, Lauris JRP, Lopes ES, Educação em saúde bucal para adolescentes: uso de métodos participativos. Rev Fac Odontol Bauru 2001;9:63-9.
29. Tai B, Du M, Peng B, Fan M, Bian Z. Experiences from a school-based oral health promotion programme in Wuhan City, PR China. Int J Paediatr Dent 2001;11:286-91.
30. Makuch A, Reschke K. Playing games in promoting childhood dental health. Patient Educ Couns 2001;61:34-41.
31. Frencken JE, Borsum-Andersson K, Makoni F, Moyana F, Mwashaenyi S, Mulder J. Effectiveness of an oral health education programme in primary schools in Zimbabwe after 3.5 years. Community Dent Oral Epidemiol 2001;29:253-9.
32. Hawkins RJ, Zanetti DL, Main PA, Jokovic A, Dwyer JJ, Otchere DF, Locker D. Oral hygiene knowledge of high-risk grade one children: an evaluation of two methods of dental health education. Community Dent Oral Epidemiol 2000;28:336-43.
33. Munoz N, Touger-Decker R, Byham-Gray L, Maillet JO. Effect of an oral health assessment education program on nurses' knowledge and patient care practices in skilled nursing facilities. Spec Care Dentist 2009;29: 179-85.
34. Paulsson G, Soderfeldt B, Nederfors T, Fridlund B. The effect of an oral health education program after three years. Spec Care Dentist 2003; 23:63-9.
35. Wårdh I, Hallberg LR, Berggren U, Andersson L, Sörensen S. Oral health education for nursing personnel; experiences among specially trained oral care aides: One-year follow-up interviews with oral care aides at a nursing facility. Scand J Caring Sci 2003;17:250-6.
36. Frenckel H, Harvey I, Needs Kl. Oral health care education and its effect on caregivers' knowledge and attitudes: a randomised controlled trial. Community Dent Oral Epidemiol 2002;30:91-100.
37. Paulsson G, Söderfeldt B, Fridlund B, Nederfors T. Recall of an oral health education programme by nursing personnel in special housing facilities for the elderly. Gerontology 2001;18:7-14.

38. Isaksson R, Paulsson G, Fridlund B, Nederfors T. Evaluation of an oral health education program for nursing personnel in special housing facilities for the elderly. Part II: clinical aspects. Spec Care Dentist 2000;20: 109-13.
39. Hakuta C, Mori C, Ueno M, Shinada K, Kawaguchi Y. Evaluation of an oral function promotion programme for the independent elderly in Japan. Gerodontology 2009;26:250-8.
40. Samson H, Berven L, Strand GV. Long-term effect of an oral healthcare programme on oral hygiene in a nursing home. Eur J Oral Sci 2009;117:575-9.
41. Slaughter A, Evans LK. Culturally sensitive oral health educational materials for older African Americans. J Health Care Poor Underserved 2007;18:868-86.
42. Carvalho VLR, Mesas AE, Andrade SM. Aplicação e análise de uma atividade de educação em saúde bucal para idosos. Espaç Saúde 2006;7:1-7.
43. Mariño R, Calache H, Wright C, Schofield M, Minichiello V. Oral health promotion programme for older migrant adults. Gerodontology 2004; 21:216-25.
44. Alves UM, Volschan BCG, Haas NAT. Educação em saúde bucal: sensibilização dos pais de crianças atendidas na clínica integrada de duas universidades privadas. Pesqui Bras Odontopediatria Clín Integr 2004;4:47-51.
45. Pereira MBB, Freire MCM. An infant oral health programme in Goiânia- GO, Brazil: results after 3 years of establishment. Braz Oral Res 2004; 18:12-7.
46. Van der Sanden-Stoeling MSE, Koelen MA, Hielkema-de Meij JE. The making of a nation-wide campaign fighting the nursing caries. Int J Dent Hyg 2003;1:16-22.
47. Sgan-Cohen HD, Mansbach IK, Haver D, Gofin R. Community-oriented oral health promotion for infants in Jerusalem: evaluation of a program trial. J Public Health Dent 2001;61:107-13.
48. Siqueira MFG, Jardima MCAM, Sampaio FC, Vasconcelos LCS, Vasconcelos LC. Evaluation of an oral health program for children in early childhood. Rev Odonto Ciênc 2010;25:350-4.
49. Meyer K, Geurtsen W, Günay H. An early oral health care program starting during pregnancy: results of a prospective clinical long-term study. Clin Oral Investig 2010;14:257-64.
50. Yang YH, Sue RL, Warnakulasuriaya S, Dasanayak AP. Promoting better oral health practices among aboriginal Taiwanese adolescents: a school based oral health education intervention program. J Health Care Poor Underserved 2009;20:41-50.
51. Yazdani R, Vehkalahti MM, Nouri M, Murtomaa H. School-based education to improve oral cleanliness and gingival health in adolescents in Tehran, Iran. Int Dent J 2009;19:274-81.
52. Plutzer K, Spencer AJ. Efficacy of an oral health promotion intervention in the prevention of early childhood caries. Community Dent Oral Epidemiol 2008;36:335-46.
53. Alsada LH, Sigal MJ, Limeback H, Fiege J, Kulkarni GV. Development and testing of an audio-visual aid for improving infant oral health through primary caregiver education. J Can Dent Assoc 2005;71:241a-241h.
54. Cruz GD, Roldós I, Puerta DI, Salazar CR. Community-based, culturally appropriate oral health promotion program for immigrant pregnant women in New York City. Dent J 2005;71:33-8.
55. Knevel RJM. Training rural women to improve access to oral health awareness programmes in remote villages in Nepal. Int J Dent Hyg 2010;8:286-93.
56. Frazão P, Marques D. Effectiveness of a community health worker program on oral health promotion. Rev Saúde Pública 2009;43:463-71.
57. Torres LHN, De Paula JS, Sousa MLR, Mialhe FL. Histórias em quadrinhos na sala de espera: um método de educação em saúde bucal. Odontol Clín-Cient 2011;10:69-72.
58. Ferreira RI, Morano Junior M, Meneghim MC, Pereira AC. Educação em saúde bucal para pacientes adultos: relato de uma experiência [Oral health education for adult patients: an experience report]. Rev Odontol UNESP 2004;33:149-56.
59. Almomani F, Williams K, Catley D, Brown C. Effects of an oral health promotion program in people with mental illness. J Dent Res 2009;88: 648-52.
60. Almomani F, Brown C, Williams K B. The effect of an oral health promotion program for people with psychiatric disabilities. Psychiatr Rehabil J 2006; 29:274-81.
61. Katsman E. Report on the activities carried out by ‘Sonrisas’ to promote oral health: the

experience of a Canadian dental hygienist in the Dominican Republic. Int J Dent Hyg 2007;5:139-44.
62. Shyama M, Al-Mutawa SA, Honkala S, Honkala E. Supervised toothbrushing and oral health education program in Kuwait for children and Young adults with Down syndrome. Spec Care Dentist 2003;23:94-9.
63. Holan G, Cohenca N, Brian I, Sgan-Cohen H. An oral health promotion program for the prevention of complications following avulsion: the effect on knowledge of physical education teachers. Dent Traumatol 2006;22:323-7.
64. Rong WS, Bian JY, Wang WJ, Wang JD. Effectiveness of an oral health education and caries prevention program in kindergartens in China. Community Dent Oral Epidemiol 2003;31:412-6.
65. Mårtensson C, Söderfeldt B, Andersson P, Halling A, Renvert S. Factors behind change in knowledge after a mass media campaign targeting periodontitis. Int J Dent Hyg 2006;4:8-14.
66. Kabil N, Alfy ME, Metwalli N. Evaluation of the oral health situation of a group of Egyptian haemophilic children and their re-evaluation following an oral hygiene and diet education programme. Haemophilia 2007;13:287-92.
67. Watson MR, Horowitz AM, Garcia I, Canto MT. A community participatory oral health promotion program in an inner-city Latino community. J Public Health Dent 2001;61:34-40.
68. Bardal PAP. Education and motivation in oral health – preventing disease and promoting health in patients undergoing orthodontic treatment. Dental Press J Orthod 2011;16:95-102.
69. Jönsson B, Ohrn K, Oscarson N, Lindberg P. An individually tailored treatment programme for improved oral hygiene: introduction of a new course of action in health education for patients with periodontitis. Int J Dent Hyg 2009;7:166-75.
70. Ribeiro EDP, Oliveira JA, Zambolin AP, Lauris JRP, Tomita NE. Abordagem integrada da saúde bucal de droga-dependentes em processo de recuperação. Pesqui Odontol Bras 2002;16:239-45.
71. Albert DA, Anluwalia KP, Ward A, Sadowsky D. The use of 'academic detailing' to promote tobacco-use cessation counseling in dental offices. J Am Dent Assoc 2004;135:1700-6.
72. Almeida GCM, Ferreira MAF. Saúde bucal no contexto do Programa Saúde da Família: práticas de prevenção orientadas ao indivíduo e ao coletivo. Cad Saúde Pública 2008;24:2131-40.
73. Sá LO,Vasconcelos MMVB. A importância da educação em saúde bucal nas escolas de Ensino Fundamental: revisão de literature. Odontol Clín-Cient 2009;8.
74. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Secretaria de Assistência à Saúde. Departamento de Atenção Básica. Coordenação Nacional de Saúde Bucal. Pesquisa Nacional de Saúde Bucal – 2010: nota para a imprensa. Brasília (DF): Ministério da Saúde; 2010.
75. Bottan ER, Ketzer JC, Oliveira LK, Tames SAF, Campos L, Farias MMGA. Educação em saúde bucal: perspectivas de integração entre professores do ensino fundamental e cirurgiões-dentistas em um município do Vale do Itajaí (SC). Salusvita 2010;29:7-16.
76. Horowitz AM, Kleinman DV. Oral health literacy: the new imperative to better oral health. Dent Clin North Am 2008;52:333-44.