A Literature Review on Social and Economic Factors Related to Access to Dental Care for Pregnant Women

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Abstract: *Background*: The early detection of oral pathology in the pregnant woman can contribute to reduction in childbirth-related complications and consequences of low birth weight. The purpose of this review was to identify and analyze main social and economic factors related to access to dental care of pregnant women.

Methods: The Guide on implementation of the narrative synthesis was used systematic reviews of research evidence Popay *et al.* 2006. The review process included identification of the approach to review, search and allocation of the available evidence, review question was specified, identified studies for inclusion in the review, extracted data and evaluation of the quality of the study. The search was about pregnant women and dental services. Qualitative and quantitative studies in a period from 1990 to 2013 were included. Publications included are in English, Portuguese and Spanish. Age was women over the age of 13 and under 45 years of age.

Results: Of 120 relevant items found in electronic databases used as PubMed, library virtual em Saúde, ISI Web of Knowledge, Scielo, The Anthropological Index Online, PsycInfo, The Psychology & Behavioral Sciences Collection, SocINDEX, ProQuest, network of scientific journals of Latin America and the Caribbean, Spain and Portugal, EBSCO, Google school. Only thirty-three articles satisfied the quality criteria to be included in the review. The most frequently identified relating to access to dentistry-related factors were: age of the pregnant woman, schooling level, ethnicity, marital status, income, occupation, socioeconomic level and attention-related social dynamics as access to information, health assurance and use of dental service according to trimester of gestation. This review found that the level of schooling achieved, family income, the marital status and having health insurance were important predictors of attending for dental care. Only three articles were qualitative research.

Conclusions: The existence of published reports on the topic of search suggests the need for more qualitative and quantitative research. Actions to improve the coverage and dental care of pregnant women should consider social and economic factors and not just the change in user behavior.

Keywords: Disparities, Socioeconomic Factor, Inequalities, Pregnancy, Dental care, Pregnant women, Utilization, Dental service.

INTRODUCTION

Dental care during pregnancy is an opportunity to enhance behaviors and habits for promoting health and prevention of disease. Early detection of oral pathology associated with systemic compromises in the pregnant woman can contribute to reduce childbirth-related complications and low birth weight [1,2].

At a time where the benefits of scientific advances in the field of general health and oral health in particular are not distributed equitably, social determinants of health approaches are necessary to guide Governments in the reduction of inequalities. Actions in oral health must be therefore not only the factors of behavior in the construction of healthy habits but the social settings in which health behaviours are developed [3].

From the second decade of the 20th century the importance of prenatal dental care, including nutrition and proper oral hygiene was recognized. Subsequently the relationship between gestation and the inflammation of the gums was identified [4]. The increase in metabolism of estrogen by the gingiva and prostaglandin synthesis, contributes to these changes [5]. These findings suggest that the first trimester of pregnancy is ideal time for pregnant women to consult the dentist at least twice, with the purpose of identifying problems and planning their treatment during the second trimester. The initial visit should include counseling and prevention. She should be told about the most common problems that may occur during the period of gestation and the appropriate way of addressing the prevention or treatment of the same [4]. Other studies have shown the limits and barriers to treatment during pregnancy including the patient and the provider of services [6].

In a study by Strafford, Shellhaas and Hade [7] found differences in perceptions between patients, dentists and obstetricians regarding safety, accessibility and the need for dental treatment for pregnant women.

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Economic factors, educational level, marital status, ownership of health insurance were associated with the use of antenatal care [8]. The purpose of this review was to identify and analyze the major social and economic factors related to access of pregnant women to dental care.

METHODS

The methodology used for this review was based on the Guide on implementation of the narrative synthesis in the context of systematic reviews of research evidence [9]. The review process included identification of the approach to review, search and allocation of the available evidence, the review question, specified identified studies for inclusion in the review, extracted data and evaluated the quality of the study.

The review question: What socioeconomic factors have been studied and related to access to dental care for pregnant women?, identified 19 key words in English with their equivalents in Spanish and Portuguese (Figure **1**).

The search was aimed at dental services for pregnant women. Articles were included qualitative and quantitative studies in a period from January 1990 to July 2013 because in this period has led to increased research on inequalities and inequities in health and most findings have been reported on the relationship between disease periodontal and general health complications of the mother.

Consideration was given as an inclusion criterion that publications were in English, Spanish and Portuguese. The environment was the institutional and dental service. The age group were women older than 13 and younger than 45 years. A search was geographically global.

The electronic databases were used: PubMed, Biblioteca virtual em Saúde, ISI Web of Knowledge, SciELO, The Anthropological Index Online, PsycInfo, The psychology & Behavioral Sciences Collection, SocINDEX, ProQuest, Red de revistas científicas de América Latina y del Caribe, España y Portugal, EBSCO, Google Scholar.

Once tested the search strategy, combinations and the selection criteria were refined. Dictionary of terms having databases were used.

Search Results

In 2630 research initially identified by the search criteria, 2490 were irrelevant when titles were examined and 20 were duplicates. Summaries of the 120 documents were reviewed, resulting in articles 84 to examine in its entirety. Of these, 12 were excluded for not having the full text. The remaining 72 articles were read in full text and quality fully evaluated. Of these, 39 were excluded for methodological quality deficiency once the evaluation and 33 were included in the review (Figure **2**).

Data Extraction

The 33 papers included were evaluated using matrices to record information with reference to the issues raised by Popay *et al*., in implementing guidance for narrative synthesis [9]. The information was grouped considering the most important issues found in the systematization. Dimensions grouped as sociodemographic factors, social environment and economic factors encompass issues related to barriers identified by different studies to access dental care to pregnant women (Table **1**). The matrices grouped by methodology allowed a quick overview of the types of design employed by the studies reviewed. For quantitative studies matrices included key elements

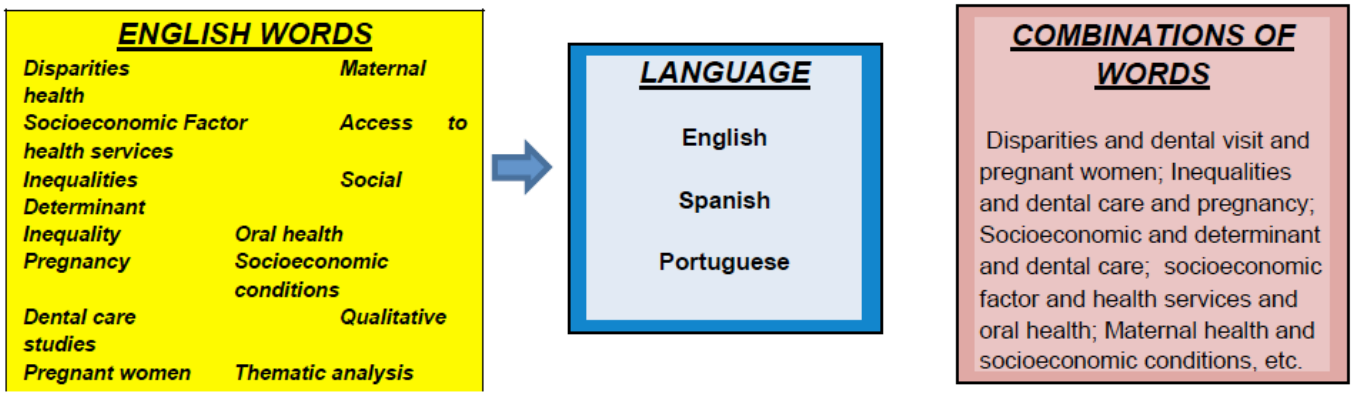

Figure 1: Presents the key words used and the different combinations to search for literature.

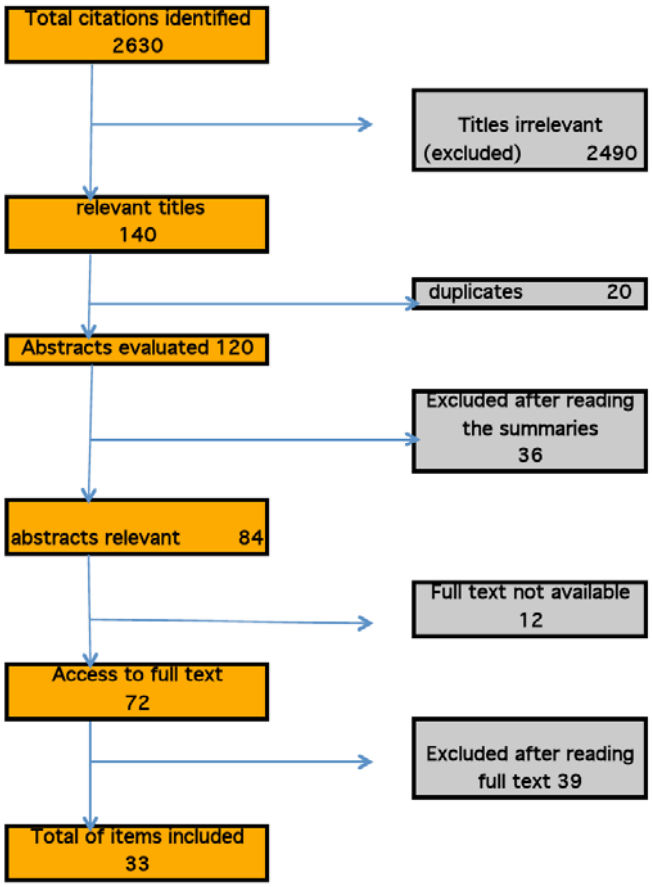

Figure 2: Flowchart of the identification and inclusion of references in the review.

such as the type of sample, using standardized instruments, statistical analysis and give an idea about whether the methodology used is solid or poor. For qualitative studies presented a matrix characterization of the subject emphasizing the most relevant theoretical aspects, see if the studies named or described the instruments used, name or describe the concept and give an analysis of the robustness of the methodology.

Quality Assessment

We evaluated the methodological quality of each document taking into account the relevance of the revision, the validity and appropriateness of the methodology, the generalization of the results, the quality of the information and the limitations of the study.

RESULTS

Of the 33 studies reviewed, 30 were quantitative and 3 qualitative. Twenty-seven studies were published in the Americas (fourteen Anglo American studies and thirteen in Latin America), 2 in Europe, 2 in Oceania, 1 in Asia and 1 in Africa. The findings of this review were grouped into the socio-demographic and economic. The topics are related to the age demographic of the mother, education level, ethnicity and marital status and social dynamics related to care and access to information, health insurance and dental service use as trimester gestation. With regard to economic issues were grouped income, occupation and socioeconomic status.

Of the thirty quantitative studies, twenty-nine were cross-sectional studies and one was an intervention. Seven used standardized instruments and twenty-one used Ad Hoc instruments. Eleven studies used measures of Association in its analysis and the other single frequency measures. In the three qualitative studies, analyzed the subject prospects were the existence of barriers to dental care and the nature of these barriers from the perspective of the pregnant woman.

Percentage of Pregnant Woman Dental Assisting

Pregnant women showed a differential behavior regarding assistance to dentist depending on the region where the study was conducted. Thirteen U.S. studies showed a range of dental visit between 19.1% to 70% with socioeconomic factors associated with dental visit, presenting as the variable income associated in four studies [10,13,36,37]. In Australia and Oceania showed the two studies evaluated dental visit a range of 32 % to 50 % without determining what kind of variables were associated with greater likelihood of visiting the dentist [30,33]. In Latin America the thirteen studies reviewed show the dental visit pregnant women in a range between 23.5 % and 83 % and only one study found socioeconomic factors, share of health services and some life styles related to the probability of going to the dental service [32]. Studies evaluated in Europe [17,35], Asia [20] and Africa [19] have a dental assisting in a range between 27 % and 34 % being in the Malaysian study more likely to attend dentistry in those pregnant women who received oral health education and had a better understanding between the relationship of oral health during pregnancy and pregnancy outcomes.

Age

The age of pregnant women participating in 12 of the studies was between 23 and 32 years [10-13,15-20,25,32]. Three studies [11,33,36] showed that the most frequent age group were older than 25. The other studies not reported the age of the pregnant woman.

Table 1: Social and Economic Characteristics Found in Pregnant Women in Studies Related to Access to the Dental Care

DIMENSIONS FACTORS	FACTORS STUDIED	NUMBER OF STUDIES	REFERENCES
Sociodemographic	Age	19	Gaffield, *et al.* [10], Vieira y Zocratto [11], Garza *et al.* [12], Timothé, *et al.* [13], D'Angelo *et al*. [14], Granville-García, *et al.* [15], Catarin *et al*. [16], Hullah *et al*. [17], Jiang *et al*. [18], Wandera *et al*. [19], Saddki *et al.* [20], Araújo *et al*. [21], Dooley [22], Strafford *et al*. [23], Detman *et al*. [24], Moimaz *et al*. [25], Fonseca *et al*. [26], Bastiani *et al*. [27], Saldarriaga *et al*. [28], Rengifo *et al*. [29], Bianca *et al*. [30], Hunter & Yount [31], Corchuelo [32].
	Ethnicity	18	Gaffield, *et al.* [10], Timothé, *et al.* [13], D'Angelo *et al*. [14], Hullah *et al*. [17], Thomas *et al*. [33] (2008), Ebrahim *et al*. [34], Saddki *et al.* [20], Dinas *et al*. [35], Lydon-Rochelle *et al*. [36], Dooley [22], Habashneh *et al*. [37], Le *et al*. [38], Strafford *et al*. [23], Hwang *et al*. [39], Detman *et al*. [24], Moimaz *et al*. [25], Bianca *et al.* [30], Hunter & Yount [31], Corchuelo [40].
	Schooling of Pregnant	18	Gaffield, *et al.* [10], Timothé, *et al.* [13], Granville-García, *et al.* [15], Catarin *et al*. [16], Thomas *et al*. [33], Ebrahim *et al*. [34], Wandera *et al*. [19], Saddki *et al.* [20], Garbero *et al*. [41], Dinas *et al*. [35], Lydon-Rochelle *et al*. [36], Dooley [22], Habashneh *et al*. [37], Moimaz *et al*. [25], Fonseca *et al*. [26], Saldarriaga *et al*. [28], Rengifo *et al*. [29], Corchuelo [40].
	Marital status	8	Gaffield, *et al.* [10], Timothé, *et al.* [13]; Dooley [22]; Habashneh *et al*. [37], Fonseca *et al*. [26], Saldarriaga *et al*. [28], Rengifo *et al.* [29], Corchuelo [40].
Social environment or Intermediaries	Access to information	11	Vieira y Zocratto [11], Granville-García, *et al.* [15], Catarin *et al*. [16], Lydon-Rochelle *et al*. [36], Araújo *et al.* [21], Mangskau KA, & Arrindell B. [42], Detman *et al*. [24], Moimaz *et al*. [25], Fonseca *et al*. [26], Bastiani *et al.* [27], Corchuelo [40].
	Health insurance	11	Gaffield, *et al.* [10], Timothé, *et al.* [13], D'Angelo *et al*. [14], Ebrahim *et al*. [34], Lydon-Rochelle *et al*. [36], Dooley [22], Habashneh *et al*. [37]; Le *et al*. [38], Strafford *et al*. [23], Saldarriaga *et al*. [28], Rengifo *et al*. [29], Corchuelo [32].
	Use dental service according trimester pregnancy	13	Gaffield, *et al.* [10], Vieira y Zocratto [11], Catarin *et al*. [16], Wandera *et al*. [19]; Saddki *et al.* [20], Dinas *et al*. [35]; Lydon-Rochelle *et al*. [36], Dooley [22], Habashneh *et al*. [37], Moimaz *et al*. [25], Saldarriaga *et al*. [28], Rengifo *et al.* [29], Corchuelo [40].
Economic	Income	13	Gaffield, *et al.* [10], Vieira y Zocratto [11], Timothé, *et al.* [13], Granville-García, *et al.* [15], Saddki *et al.* [20], Lydon-Rochelle *et al*. [36], Araújo *et al.* [21], Habashneh *et al*. [37]; Le *et al*. [38], Moimaz *et al*. [25], Fonseca *et al*. [26], Bianca *et al*. [30], Corchuelo [32].
	Socioeconomic status	6	Gaffield, *et al.* [10], Thomas *et al*. [33], Dinas *et al*. [35], Habashneh *et al*. [37], Fonseca *et al*. [26], Saldarriaga *et al*. [28].
	Occupation of the mother	6	Granville-García, *et al.* [15], Catarin *et al*. [16]; Saddki *et al.* [20], Moimaz *et al*. [25], Saldarriaga *et al*. [28], Corchuelo [40].

Other studies found that pregnant women over 30 years consulted more than other age groups [14,18,37,30]. In the study of Habashneh [37], found that older pregnant women who had an age greater than or equal to 30 years more attended dental clinic that pregnant women who were under 20 years of age.

The studies reviewed do not show age as a factor predicting attending dental practice. The simple logistic regression analysis also showed that age factor was not associated with a dental visit [20,32].

Ethnicity

Eighteen studies took into account the variable ethnicity of the thirty-three reviews analyzed (Table **1**). The ethnic characteristics of pregnant women participating in the studies varied by region. In four of

the studies in U.S. population, more than two-thirds were white populations [10,13,22,37]; Hispanic, black, Aboriginal population and other minorities represented less than a third [10,13,14,22,34,36,37]. The ethnic characteristic profile of pregnant women participating in trials of four other countries presents a greater percentage as predominant ethnicity by country. So in Malaysia, 94.4% were Malays [20]; in the study of Greece, 74.6% were Greek [35]; 89% Australian [33]; and in the study of the United Kingdom, the majority of pregnant participants were white population 37.4% and black population [17] 36.9%. Only 2 studies in Latin America took into account the ethnic group [25,32]; in African study ethnicity was not taken into account.

Pregnant women attending the dental were white non-Hispanic (32.2% to 62.9%) according to the studies done in United States [10,13,14,36]. In the study of Greece [35] the proportion of non-Greek women who attended the dental practice was higher than the Greek, with a difference of 15.6%.

Two of the studies reviewed sought the association between ethnicity and dental attendance. In the study of Gaffield [10] being Hispanic was associated with no dental search (Table **1**). The Afro-descendants had differential access relative to other groups in the study by Corchuelo [40]. This relationship remained making adjustments within the social dimension but lost significance when other variables included dimensions (economic, care and lifestyle). In the other study found no association [20].

The studies reviewed were not related variable ethnicity as a predictor of use of dental services. In the study by Ebrahim *et al*. [34] related ethnicity with antenatal care, finding an association between being black and not prenatal care in the first trimester.

Schooling

Level of schooling of pregnant participants differed by regions. In the United States of America and Australia, 41.0% to 74.0% of pregnant women had as high school level reached the post-secondary and higher [10,13,22,33,36,37]. 50.6% to 62.0% of pregnant women in studies done in Greece, Malaysia, Colombia and Uganda had a level of education high school complete [19,20,32,35]). Studies in most Latin America, 30.7% and 83.3% of the pregnant women had a level of primary or secondary incomplete [15,16,25-29,41].

One of the studies found differences between the highest level of education attained by pregnant women according to the type of services where provided you dental care, where the maximum level reached by pregnant women attending public services was the primary level in a 61.9%, while private sector attendees had a maximum level of schooling achieved complete secondary school [41].

The study by Habashneh *et al*. [37] presents as between lower level education had the pregnant minor was the possibility of attending the dental practice.

Educational level was a significant predictor for the use of dental services during pregnancy [32,37].

Marital Status

Eight of the studies reviewed included the marital status of the pregnant women, 4 done in the United States of America and 4 in Latin America; 51.9% to 87.0% were married [10,13,22,26,28,29,37,40].

In studies of Gaffield *et al.* [10] (2001) and Corchuelo [40] not be married or living without a partner is related to not attend the dental clinic (Table **1**).

Accessibility to Information

In eight of the studies reviewed, 48.7% to 80,0% of the pregnant women reported did not receive information about the importance of attending the dental service [11,15,16,21,24,25,26,27]. In studies of Saddki and Corchuelo, oral health education given by health services to pregnant women was a factor significantly associated with dental visit.

Health Insurance

Eleven studies included the type of insurance as a variable related to pregnant women access to dental services, eight in the United States. 33.0% to 70.2% of pregnant women were insured through private insurance; 11.5% to 63.6% have the Medicaid insurance [10,13,14,22,34,36,37] or receive State subsidies through insurance companies [28,29,32]. In the study by Ebrahim *et al*. [34], 12.4% of pregnant women did not have any type of insurance.

In the study of Gaffield *et al*. [10], mothers with Medicaid insurance and those with other sources of payment were less likely to attend the dental surgery than those with private insurance. In the study of Habashneh *et al.* [37] dental insurance were significantly associated with an increased likelihood of having a dental visit during pregnancy. In the study of

Corchuelo [32], pregnant women with health insurance contributory system (those who had ability to pay), middle income level and higher, and those manifesting have sufficient resources to pay for basic needs, were associated with more likely to attend a dental clinic.

Use Dental Service According to Trimester of Gestation

Access to health service including dental clinic presented differences between the countries where the studies were conducted. 53.5% to 81.0% of pregnant women attended the inquiry during the first trimester of pregnancy in the studies on the United States of America [10,22,36,37]. More than half of the pregnant women in the third trimester of pregnancy attended the consultation in the studies performed in Greece, Malaysia, Uganda, and one of the studies of Brazil [11,19,20]. In four of the five studies on Latin America, the majority of pregnant women attended consultation were in the second trimester of pregnancy [16,25,28,29].

No significant association was found between the visit to the dentist and the gestation period [20,40].

Income

Income of pregnant women participating in the studies reviewed was heterogeneous. The majority of the participants in studies on United States of America had salaries between median and high [10,13,36,37]. The pregnant women who participated in the studies carried out in Brazil, the majority (44.7% to 89.3%) had low income [11,15,21]. The middle income was the characteristic of pregnant women participating in the study of Greece [20].

The simple logistic regression analysis did not find income associated with dental visits [20]. In the study by Lydon-Rochelle *et al*. [36] found that low income was associated with dental care. In studies conducted by Habashneh *et al*. [37] and Corchuelo [32], middle and higher income were significantly associated with an increased likelihood of visiting a dentist during pregnancy.

Socioeconomic Level

Socioeconomic status was taken into account in two studies in United States of America, two in Latin America, one in Greece and one in Australia. 28.0% to 48.3% of the pregnant women were socio-economic level low and 45.0% to 50.2% were of socioeconomic level medium [10,33,35]. In the study Habashneh *et al*. [37], most of the women were of high stratum by level of education and income observed.

Occupation

34.4% to 73.2% of pregnant women were devoted to the home [15,16,20,25,40]; 36.8% to 48.4% worked and 17.2 per cent were studying. The simple logistic regression analysis found no associated occupation of the pregnant woman with dental visit [20].

With regard to the two qualitative studies, they were identified and analyzed the barriers to dental care for pregnant women. According to the studies of Albuquerque *et al*. [24], Le *et al*. [43] and Detman *et al*. [44], the obstacles related to the pregnant women were low perceptions of need, anxiety and fear; costs and the difficulty of access to the dental service

Among the difficulties in accessing the query found the existence of scheduling difficulties, risks leaving home, transportation, money for transportation, lack of time, time off work unpaid, little credibility in procedures performed and diagnosis of the dentist, the office location, the absence of the dentist and the lack of free information.

The stress was caused by problems internal to the person, including physical and emotional problems as well as external factors, including relationship, economic problems, employment problems and living conditions / environment.

DISCUSSION

This review assessed a limited number of studies published in English, Portuguese and Spanish literature published from January 1990 to July 2013. Thirty of the thirty-three studies were quantitative studies reflecting a domain of positivist research positions of social and economic factors related to oral health. Studies are required not only quantitative tools but tools that do a better approximate categories that describe the subjects as social beings, historical dynamics and interactions, to assess the influence of social determinants of oral health in a group vulnerable as the pregnant group.

We found at least one country from each continent, with the United States of America has the highest number of investigations that social and economic factors associated with access to dental care. Although studies are not product of national studies or systems of monitoring of assessment of risk to pregnant women except five studies in United States, we can analyze

trends in each of them taking into account the context where they live the pregnant women. This is how we look at the number of pregnant women who do not attend the dental practice in the most critical situation ranged around 30% in the United States; 50% of pregnant women were not the dental practice in the study of Australia, and in the case of countries located in Latin America, Africa and Asia do not care the proportion of pregnant women was greater (66.6% to 75.5%). This situation reflects in some ways as oral health conditions are related to the development of each country. One of the reasons that Latin America has not reached the goals in the reduction of caries at the rate as did developed countries is possibly due to high rate of decay is related to poverty [45].

The studies reviewed found no age a predictive factor for the dental practice. However, the study of Habashneh *et al*. [37] the age and education were associated with other variables, such as oral health knowledge, which were more closely related to visits to the dentist. In the study of Corchuelo [32] the age was associated with variables oral health lifestyle such as oral health knowledge, lower risk of having a cariogenic diet and better hygienic practices, which were more related to visits to the dentist.

Regarding ethnicity, studies of pregnant women in the United States that looked less dentistry were ethnic minorities and between being Hispanic was associated with no dental search [10]. In countries with a marked ethnic difference in the distribution of pregnant women as participants in Malaysia and Greece, there were no significant differences in the proportion of pregnant women who attended the dental office. The condition to be Hispanic or African American situation places them at inequality with other social determinants such as income and insurance tenure as found by Ebrahim *et al*. [34] where Hispanics had the highest percentage of income poverty (51.3%) and the uninsured (30.7%), while African Americans (34.3%) had the highest percentage of children living in poor social capital.

This review found that the level of schooling achieved, household income, the marital status and having health insurance are related to dental clinic to attend. Simkhada *et al*. (2008), in the review about the use of antenatal care in developing countries, describes to the financial constraint as the most important factor in the use of such service and the education of women was the best predictor of visits to antenatal; married women, income and health insurance have had a positive relationship in the utilization of antenatal. Few studies have included marital status and measured their relative weight in relation to access to dental care [10,13,22,37]. Being married seems to influence the consultation and assistance in the study by Habashneh *et al.* [37] was included as a predictor in the multivariate analysis. Studies are required to identify psychosocial, sociocultural and economic costs are associated with this trend if any.

Educational level was a significant predictor for the use of dental services during pregnancy [37,40]. In studies it is observed as in countries with high level of schooling of pregnant women as in the case of the United States of America, had also increased assistance to the dental practice. In contrast, in the most studies in Latin America the highest level of schooling was distributed between the level of primary and secondary schooling complete and in turn compared to attendance at the consultation, the gap of absence big. It should be aware that the level of schooling is a structural determinant as well as revenue in the social determination of health so your study and visibility are required to generate actions that reduce inequities that generate. In the study Habashneh *et al*. [37] found that education level was associated with the level of oral health knowledge and dental office visit of the mother so it is important to consider the effect it can have the way of life of the pregnant versus lifestyle. The first group conditions related to access to education, consumer goods and services, capacity for empowerment group, the latter, the lifestyle associated with the itinerary pregnant staff, their family and personal pattern of consumption as food, conceptions and values. This may facilitate approaches of variables that are part of different domains of social life where health is determined [46], this is how the variables related to the knowledge, beliefs, practices and concepts of oral health have a unique domain, the variables related with ethnicity, social class, gender, whether approached from the particular domain or of social groups and issues related to employment, education, whether general or domain part of society in general.

Actions aimed at increasing the level of education of women will increase female autonomy as raises it Raghupathy [47] and creates greater confidence and capacity.

Factors related social dynamics related to attention as the accessibility to information as an input to learning in health education has partnered with the

dental visit. Hence the importance that issues such as the relationship of oral health with the systemic involvement of some preventable oral diseases have mechanisms for access to information and education in an equitable manner. The reference given to pregnant women to dentistry and education in the same prenatal care about oral health, were found as key factors in the decision of the mother to attend the service [40]. The equitable approach should include women generate higher living standards so they can have access to the media where they have information on the benefits of scientific advances in health [48].

Having insurance in health that includes dentistry will facilitate overcoming the barrier related to healthcare costs. Some health insurance partially include dental care benefits so that the inclusion of a subsidized dental insurance can tackle treatments as essential periodontal therapy in the control of the periodontal disease associated with systemic complications such as childbirth pre term, pre eclampsia, cardiovascular problems, etc.

Although no significant association was found between the visit to the dentist and the gestation period if it is striking the difference in access to prenatal care and the service of dentistry between countries with better socio-economic development and in developing countries. The studies reviewed show the gap between a developed country as United States where pregnant women enjoy the benefits of assistance in health since the first quarter of gestation and the other countries where the highest attendance being presented in the third quarter, away the possibility of a timely detection of problems that increase the risk of complication of pregnancy and antenatal care such as dental care consulting.

With regard to income, two of the three studies found the income associated with the visit to dentistry. As well as socio-economic status and the employment income is considered a structural determinant in health generator of inequities, so this factor must be taken into account in studies related to accessibility to the dental services.

Reforms to the health sector that are experiencing Latin American countries following guidelines from the World Bank has encouraged the privatization of services, that while in some countries points to the assurance of the poorest and most vulnerable population, is also true that in the case of oral health coverage is partial as well as ask for co-payments population that has no purchasing power. The existence of private insurance for people with capacity to pay, while good used part of the professional population, it is also true that they are a minority that can afford this type of insurance. Dental packages are also both for insured persons at the level of the population subsidized as the population of contributory schemes or insurance pay tribute for their health either in a tripartite in countries where there are social insurance or the direct payment of self-employed workers to private or State, insurers reduced and controlled through quotas moderators and in some cases limited to materials whose cost may be more economical to the insurer. This situation to led that access to the comprehensive dental services depend on the ability to pay at the individual level and the emphasis are increasingly more therapeutic than preventive, which requires a discussion with bioethics as interlocutor to propose systems of equity [49].

A characteristic of the most common oral diseases such as caries and periodontal disease is the silent appearance helps pregnant women tend to delay treatment. Most of the mothers in this study who did not attend the dental clinic stated that they had no dental problem [20,40].

Qualitative studies [24,43,44] found that barriers related to dental attendance of pregnant women were low perception of need, anxiety and fear, the costs and the difficulty of access to dental services. In short, there is a relationship with socioeconomic status and low perception of need variables that relate structural and cultural aspects or lifestyle variables to consider strategies for improving access to dental care.

Studies that aim to make visible the barriers preventing pregnant women obtain dental care should be encouraged to generate evidence which facilitate the decision makers in health to generate policies that help close these gaps unjust, unnecessary and avoidable. This review found the existence of unfair and avoidable gaps in relation to dental care considering social dimensions such as ethnicity and level of education attained, the economic dimension reflecting differential behaviors and decisions between users with better socioeconomic status than those with unfavorable situation. These aspects orient the focus must include an upstream view using the metaphor to address the causes of causes, from the structural, including macroeconomic policy, educational systems, labour markets, fiscal policy, welfare and health systems [50]. Aspects of everyday or downstream approach must be contextualized within the social

findings, economic and cultural intervention keeping in mind the environment which reproduces unfair conditions as the non-inclusion of certain specific ethnic groups or socioeconomic status in profits in the care of the pregnant woman.

At the political level, this review suggests that the increase of women's participation in education, will not only have long-term positive effect on use of the services of health including dentistry but improvements in the quality of life of vulnerable populations.

Description of Indicators Bibliometricos

The largest number of articles on the subject were published between 2005 and 2010, being the 2008 with eight articles with higher publication year. The thirty-three articles selected in this review were published between the year 1996 and the year 2013. The number of authors for publication is from two as a minimum, up to ten maximum, while the average of five authors per article. 66% of the authors are women.

With regard to the nationality, the majority of researchers are United States 70 (49%), followed by Brazil with 32 participants (22%). By region taking into account the number of authors, 49% were of Anglo-Saxon America, 34% Latin American, 12% European, Australian 2.0%, 2.0% Asian and 1.0% African. There was only an article where international collaboration is presented.

Two-thirds of researchers are attached to universities and other independent institutions. Two third parts of the articles were written in English, 26% in Portuguese and 13% of the articles were written in Spanish language. Ten studies are published in magazines that were in the quartile one and two in the ranking of journals in the category health, dentistry, social sciences and obstetrics. Two-thirds of the studies analyzed the schooling and approximately fifty percent of the studies analyzed age, ethnicity, and income. A fifth took into account the socio-economic level. Studies in three of the four countries located in Latin America and in the African country, did not take into account ethnicity, holding of insurance of health or marital status.

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