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Intrauterine Dentistry: An Integrated Model of Prevention

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Intrauterine Dentistry is a highly relevant subject of our time. The use of preventive measures in the intrauterine stage can avoid several diseases, among these, dental caries. The WHO advises that from the 4th month of pregnancy, women should avoid the intake of sugar, so that the fetus, future child, does not develop an exaggerated attraction for these types of foods, thus being susceptible to caries. Through questionnaires sent to gynecologist-obstetricians and dentists, this research investigated the information they have about this subject and how they instruct their patients. Questionnaires were also sent to pregnant women requesting information about the instructions they had received for the prevention of oral diseases of their fetus. Seventy-one percent of the dentists and 80% of the gynecologist-obstetricians reported having instructed the pregnant women to reduce the intake of sugar. However, only 13.6% of the dentists and no gynecologist-obstetrician instructed the reduction of sugar intake between the 12th and 18th week of pregnancy. A total of 42.2% of the pregnant women referred to these instructions, but none received instruction as to the specific period of the 12th and 18th week. An ideal model of treatment for pregnant women must include integrated and multiprofessional treatment, in which general dentists and gynecologist-obstetricians work together with the participation of the patient.

Key Words: pregnancy, preventive dentistry, intrauterine dentistry, diet.

INTRODUCTION

Intrauterine Dentistry is a highly relevant subject of our time because its preventive measures can avoid several diseases such as dental caries. In the WHO Bulletin "Health for all in the year 2000", pregnant women are advised to avoid the intake of sugar from the 4th month of pregnancy on, due to the fact that the baby's taste sensory organs start developing. If at this stage the mother consumes too much sugar, her child will certainly have great preference for sweetened foods (1).

Hersch and Ganchrow (2) and Dourov et al. (3) described the appearance and development of papillae on the dorsum of the human tongue at different embryonic and fetal ages. They found the first signs of circumvallate papillae as early as the 8th-12th week of embryonic development. Signs of foliate papillae on the posterolateral surface of the tongue appear at about 10 weeks. Fungiform papillae begin to develop before filiform papillae, which appear at 10-18 weeks. All types of tongue papillae are present in their mature form in embryos of 23-26 weeks (2). Taste buds differentiate in the epithelium of developing papillae shortly after nerve fibers have penetrated the epithelium. This means that formation of taste buds, which are first seen at 12-14 weeks (5), is apparently initiated by the sensory nerves (4).

Mbiene et al. (6), studying the embryonic development of rat tongue gustatory papillae through organ cultures, observed that in vitro development of such occurred without sensory ganglion support.

Neuroepithelial cells, which are the receptors of gustatory stimuli (7) are found in the structure of the taste buds. Considering that taste buds form between the 12th and 14th week of pregnancy and that by the

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18th week all papillae are formed, pregnant women should avoid the intake of sugar from this period on, so that their fetus does not develop an exaggerated attraction for sugar in the future, and thus will be less susceptible to caries.

Pediatric dentistry, especially intrauterine dentistry, can properly instruct these patients. However, patients are usually treated only by gynecologist-obstetricians, who, in their majority, are not aware of this information. Education is of fundamental importance in the pre-natal period because it influences maternal and fetus factors and in the post-natal period, the child and parent factors (8). Such responsibilities will also help the baby to have better dental health with higher resistance to caries (9).

This research investigated the information gynecologist-obstetricians and dentists have about this subject and how they instruct their patients, as well as questioning pregnant women as to the instructions they had received for the prevention of oral diseases of their fetus.

MATERIAL AND METHODS

One hundred and fifty questionnaires were distributed to 100 professionals of different genders, age, time of graduation and educational institutions (50 gynecologist-obstetricians, 50 dentists), and to 50 pregnant women. The gynecologist-obstetricians were questioned regarding their instructions to the pregnant women to reduce the intake of sugar and indication to seek consultation with dentists. Dentists were asked about diet guidelines given to these pregnant patients. The professionals were advised to answer the questions without consulting literature or other professionals. The pregnant women were questioned regarding the instructions received about diet and if they had oral alterations.

Table 1. Distribution of sample according to period of pregnancy in which instruction was given to reduce the intake of sugar as reported by dentists (N=22), gynecologist-obstetricians (N=16) and pregnant women (N=19).

Period	Dentists (%)	Gynecologist-obstetricians (%)	Pregnant women (%)
Whole pregnancy	18 (81.8)	13 (81.2)	16 (84.2)
0-12 weeks	1 (4.6)	0 (0.0)	1 (5.3)
12-18 weeks	3 (13.6)	0 (0.0)	0 (0.0)
After 18 weeks	0 (0.0)	3 (18.8)	2 (10.5)

Ninety-six of these questionnaires were returned (64%). The 20 gynecologist-obstetricians were 8 males and 12 females, ranging in age from 24 to 44 (average 31.6 years). The 31dentists were 13 males and 18 females, ranging in age from 23 to 52 (average 31.8 years). A total of 45 pregnant women (age range 16 to 38 years, average 26 years) returned the questionnaires.

The data were submitted to descriptive analyses and compared to existing literature.

RESULTS

A total of 22 dentists (71%) and 16 gynecologist-obstetricians (80%) reported to have instructed the pregnant women to reduce sugar intake. Forty-five pregnant women (42.2%) reported having received these guidelines from gynecologist-obstetricians. Only 13.6% of the dentists and no gynecologist-obstetricians instructed the women to reduce sugar intake between the 12th and 18th week of pregnancy and no pregnant women reported receiving instructions in this period (Table 1). Fifty percent of gynecologist-obstetricians reported referrals of pregnant women to dentists, but only 13.4% of the patients reported such referrals. According to the pregnant women, 20% reported an increase in caries and 37.8% reported gum bleeding during the pregnancy. Interest in taking a course about Intrauterine Dentistry was reported by 71% of the dentists and 50% of the gynecologist-obstetricians.

DISCUSSION

The current tendency in education for oral health centers for identifying high-risk groups is to offer information for preventive measures. As a specific strategy toward such ends, a program of education for oral health during the gestation period is proposed, which may enable women to prevent oral diseases both in themselves and their babies (10).

Because in Brazil it is the general clinician who treats the majority of pregnant women, the dentists chosen for this research were general clinicians. However, Preventive Dentistry and Pediatric Dentistry professionals have ideal information.

The WHO guidelines for the reduction of sugar intake during pregnancy is one of the fundamental

aspects for the prevention of caries disease (1). Although a number of dentists and gynecologist-obstetricians reported having instructed the pregnant women to reduce the intake of sugar, 13.6% of the dentists and no gynecologist-obstetrician instructed the reduction of sugar intake between the 12th and 18th week of pregnancy, which is the period of embryonic development of the taste buds and the end of the appearance of gustatory papillae (2-4). Only 42.2% of the pregnant women referred to these instructions, but none received instruction as to the specific period of the 12th and 18th week.

The need for more information about the prevention of tooth decay and mouth and tooth hygiene during pregnancy is evident. We suggest supplementing pregnancy guidelines by including two visits to the dentist as an integral part of prenatal checkups (11). In this study, 50% of the gynecologist-obstetricians reported having referred their patients, but only 13.4% of the patients reported such referrals. In an ideal health model, all of the patients should be referred to dental evaluation and the gynecologist-obstetrician should verify compliance.

Twenty percent of the pregnant women reported an increase in caries and 37.8% reported gum bleeding. Most authors consider an increase in caries during pregnancy to be caused by negligence of treatment because the hormonal alterations and the hyperacidity of the saliva are not sufficient to cause caries (12). Gum bleeding is caused by gingivitis. The cause of pregnancy gingivitis is possibly multifaceted: increased plasma female sex hormones, alteration in dental plaque and perhaps Prevotella intermedia in the subgingival plaque, plus alteration of the immunoresponse (13).

Thus, an ideal model of treatment for pregnant women must include integrated and multiprofessional treatment, in which general dentists, pediatric dentists, gynecologist-obstetricians, pediatric physicians and nutritionists work together with the patient. Simple measures, such as dietary instruction, can lead to satisfactory results. Prevention is always the best form of any therapeutic approach to a disease.

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RESUMO

Gonzaga HFS, Buso L, Jorge MA, Gonzaga LHS. Odontologia intra-uterina: um modelo integrado de prevenção. Braz Dent J 2001;12(2):139-142.

A Odontologia intra-uterina é um tema de alta relevância no panorama atual. A adoção de medidas preventivas na fase intra-uterina pode prevenir várias doenças, dentre estas, a cárie dentária. A OMS preconiza que a partir do 4º mês, as gestantes devem evitar a ingestão de açúcar, para que o feto, futura criança, não desenvolva uma atração exagerada por estes alimentos, ficando mais susceptível a doença cariosa. Este trabalho se propôs investigar através de entrevistas, junto a médicos ginecologistas obstetras (GO) e cirurgiões-dentistas clínicos gerais (CD), quais as informações que têm sobre este tema e como orientam suas pacientes, bem como investigar junto a mulheres gestantes, quais as orientações recebidas para prevenção de doenças bucais dos seus fetos. 71% dos CD e 80% dos GO orientavam a gestante a diminuir a ingestão de açúcares. No entanto, apenas 13,6% dos CD e nenhum dos GO orientavam esta redução entre 12ª a 18ª semanas de gestação. 42,2% das gestantes referiram esta orientação, mas nenhuma recebeu a orientação específica sobre o período entre a 12ª a 18ª semana. Um modelo ideal de atendimento à gestante deve compreender um atendimento integrado e multiprofissional, na qual atuem CD clínicos gerais e GO e tenha a participação do paciente.

Unitermos: gravidez, odontologia preventiva, odontologia intra-uterina, dieta.

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