

Survey on women's awareness of the importance of oral hygiene during pregnancy for the health of the mother and her unborn child: Observational aepidemiological study



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Abstract

Aim This research aims to assess the oral hygiene habits of women in the perinatal period. The study also aims to ascertain the degree of awareness of mothers, or future mothers, about the importance of oral hygiene for themselves and their child.

Materials and methods Study design: aepidemiological, observational, cross-sectional survey among a group of young women of childbearing age. The group was composed of mothers recruited from kindergartens and pregnant women who went to counseling centers or participated in childbirth courses throughout Italy.

Results The sample included 500 women from Central and Northern Italy and 263 from Southern Italy for a total of 763 subjects. Most of them were Italian (87.9%) and just over 50% of them had at least one child (52.7%); 40% were above 35 years old, and 52% were between 25 and 35 years of age.

Conclusion Young women often underestimate the importance of oral hygiene even before pregnancy, and the impact of oral hygiene lasts throughout gestation and continues after childbirth.

KEYWORDS Pregnancy, Prevention, Perinatal period.

Introduction

Dental problems may occur during and post pregnancy due to hormonal changes that affect the stomatognathic system. The blood concentration of estradiol and progesterone increases in the gestation period, causing an increase of vascularisation and swelling of the mucous membranes, which, in conjunction with decreased immune defenses, create an environment conducive to the development of oral inflammatory diseases.

In addition, general factors, such as the individual's health or eating habits, and local factors, such as any qualitative or quantitative changes in saliva or certain local irritants (plaque and tartar accumulation, malocclusion, incongruous restoration, or prostheses) play a major role. Psychological factors must also be considered, which can lead to a delay in dental care for fear of any treatment hurting their unborn child. The most common consequences are gingivitis, enamel erosions, caries, epulis gravidarum, and chloasma gravidarum [Paglia and Colombo, 2019].

Women who wish to become pregnant do not always undergo preventive dental visits, but rather present to the dentist with urgent clinical needs. This lack of information and education presents risks for the oral health of the pregnant woman as well as her unborn child. In the case of pregnancy, certain imbalances can lead to the manifestation of dental pathologies (thus prompting a doctor's visit), while in the case of the unborn child, the same lack of information can affect eating future habits and home hygiene [Cianetti et al., 2017; Paglia et al., 2016]. To prevent these problems it is therefore essential to begin oral hygiene education before a woman is pregnant, which requires awareness and buy-in from gynecologists, midwives, and medical institutions to promote an accurate and comprehensive education campaign on the subject.

During pregnancy, a woman has an entirely new attention towards her body, focused on the arriving child. It is common to hear future mothers describing the nine months as a period of "suspension" where they have anxieties and doubts about the necessity of periodic checks which can lead to a neglect of dental visits in the interim. It is therefore appropriate to help future mothers approach oral health in a new way. The mouth is not a separate compartment to be managed when convenient, but an important health determinant for the woman and her unborn child.

This topic is the subject of increasing interest worldwide. In 2012, the European Federation of Periodontology (EFP) and the American Academy of Periodontology (AAP) participated in a joint workshop on the subject [Sanz and Kornman,

2013]. The objectives included investigating the possible role of periodontal disease on adverse pregnancy outcomes, such as preterm birth, low birth weight, pre-eclampsia, and gestational diabetes. At the conclusion of this meeting, a document was drawn up (which has undergone three complete revisions) investigating the aepidemiology [Ide and Papapanou, 2013] and pathogenesis [Madianos, 2013] of this correlation, and the effects of periodontal therapy on a successful pregnancy [Michalowicz, 2013]. Starting from this knowledge, guidelines have been established that allow mothers, dentists, and healthcare workers to recognise and address the relationship between periodontal disease in pregnant women and the health of the unborn child.

However, there has been insufficient attention paid to this subject in recent years. In 2008, most health professionals interviewed at the American Congress of Obstetricians and Gynecologists (ACOG) stated that they did not address issues concerning oral health during prenatal visits [Morgan et al., 2009]. Preserving and consolidating an optimal level of systemic as well as oral health in the perinatal period has, however, been identified by the National Institutes of Health (U.S.) as a long term objective. It is also important to remember that correct oral hygiene habits in mothers decreases the risk of vertical transmission of cariogenic bacteria to their children, which could lead to the onset of caries when they are preschool age (ECC) [Marqués Martínez et al., 2019; American College of Obstetrics and Gynecology, 2004; Childers et al., 2017; Parisotto et al., 2010]. The lack of knowledge and proper oral habits of pregnant women has led to some doubt regarding the quality of dental care education by the various health professionals (obstetricians, gynecologists, dentists) to future mothers [Vamos et al., 2015]. Our research aims to assess the habits of women during the perinatal period and to ascertain their awareness of the importance of oral hygiene for them and their unborn child during pregnancy.

Materials and methods

The study design is an aepidemiological, observational, cross-sectional survey among a group of young women of childbearing age. They were mothers recruited from kindergartens, along with pregnant women who went to counseling centers or participated in childbirth courses throughout Italy. Through these channels, questionnaires were distributed to investigate oral health habits in the perinatal period.

The inclusion criterion was: a woman of childbearing age who was pregnant or had at least one child. The only exclusion criterion was the refusal to participate in the survey.

Data collection was carried out by administering an anonymous 12-question survey based on information found in scientific literature. The questionnaire included general information (age, presence or absence of children, nationality) and information on the subject's level of attention to dental care for herself and her child before, during, and after pregnancy (Table 1). The research was conducted through the first half of 2019. Data processing was performed using Microsoft Excel software.

Results

The sample includes 500 women from Central and Northern Italy, and 263 from Southern Italy for a total of 763 subjects.

PREGNANCY AND ORAL HEALTH QUESTIONNAIRE

1) How old are you?

- ☐ Less than 25 years
- ☐ Between 25 and 35 years
- ☐ More than 35 years

2) Do you have children?

- ☐ Yes
- ☐ No

2.1) Age of children:

- ☐ 1st child ...
- ☐ 2nd child ...
- ☐ 3rd child ...

3) What is your nationality?

- ☐ Italian
- ☐ Foreign

4) Did you undergo a dental examination in the 6 months prior to the start of pregnancy?

- ☐ Yes
- ☐ No

5) What importance did you/do you give to the care of your mouth during the period of pregnancy?

- ☐ Not important
- ☐ It is important, but I prefer to postpone it until after delivery
- ☐ Very important

6) During pregnancy, did you have periodic dental visits?

- ☐ Yes
- ☐ No

7) Do you feel safe for yourself and your child to be treated during pregnancy?

- ☐ Yes
- ☐ No
- ☐ I do not know

8) During pregnancy, hormonal changes can lead to changes in the condition of the gums resulting in bleeding. Are you aware of this?

- ☐ Yes
- ☐ No

9) Did you ask the dentist about any precautions to be taken during pregnancy?

- ☐ Yes
- ☐ No

10) Are you aware of the fact that children born to women with poor oral hygiene and predisposed to caries are more likely to develop cavities themselves?

- ☐ Yes
- ☐ No

11) Did you ask the dentist about oral hygiene measures to be taken with your child?

- ☐ Yes
- ☐ No

12) At what age do you think it is important to start cleaning your child's mouth?

- ☐ Before the teeth come in
- ☐ After the first tooth comes in
- ☐ I do not know

Table 1 The questionnaire administered.

Most of the women were Italian (87.9%) and just over half had at least one child (52.7%). The women's ages were greater than 35 in 40% of cases, and between 25 and 35 in 52% of cases. The average age of the children did not exceed 6 years old (Fig. 1, 2, 3).

Just over half of the subjects had a dental check-up before pregnancy (56%) and considered oral care to be important during this period (52.3%). However, most mothers (63.6%) did not have dental checks-ups during pregnancy (Fig. 4, 5, 6).

While 78.4% of mothers knew that hormonal changes could affect their oral health and 52% considered it safe to undergo dental care during pregnancy (Fig. 7, 8), only 36.7% of the women asked their dentists about precautions to take during pregnancy or recommendations regarding oral care for their child (Fig. 9). Moreover, only 36.4% of them were aware that poor maternal oral hygiene could have negative effects on their unborn child, as it increases the risk of carioreception (Fig. 10).

Finally, we found that mothers did not have a clear understanding of when to start cleaning their child's mouth (24.8% of the sample did not know), but only 38.9% of them asked their dentists for advice (Fig. 11, 12).

Discussion

Even though the interviewed subjects did not constitute a representative sample of women in the perinatal period, they crossed a variety of sites and stages of motherhood. Given the high number of women with children who completed the questionnaire and the average age of their first child (5.2 years), it can be hypothesized that they have long been in contact

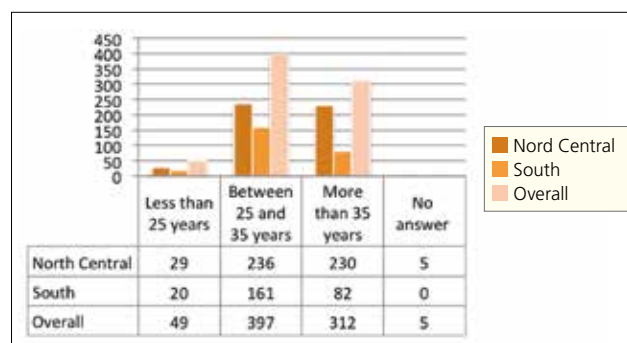


FIG. 1A Age

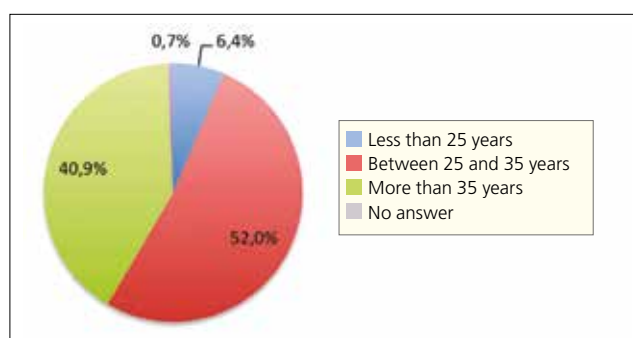


FIG. 1B Age

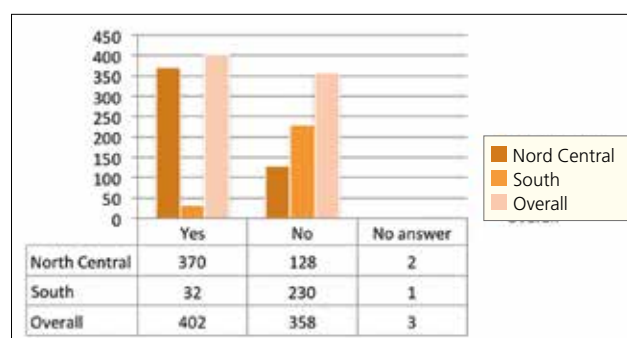


FIG. 2A Do you have children?

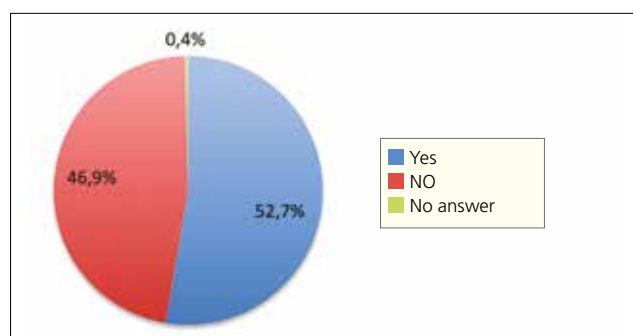


FIG. 2B Do you have children?

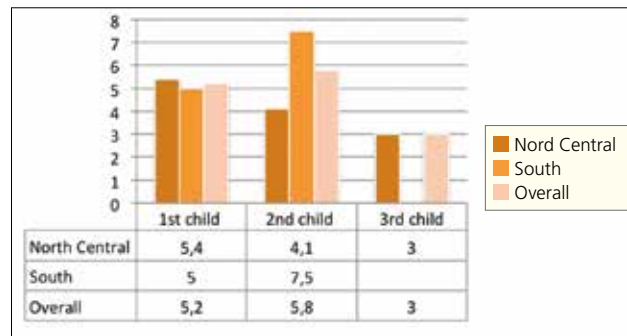


FIG. 2C Age of children?

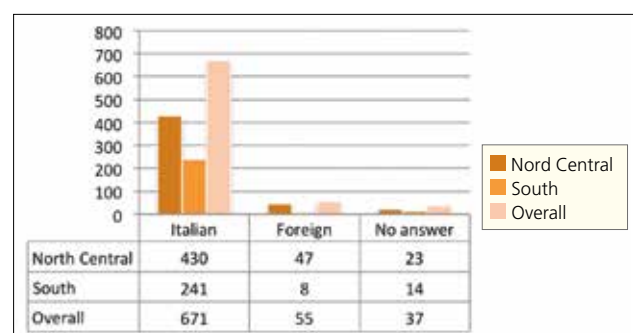


FIG. 3A What is your nationality?

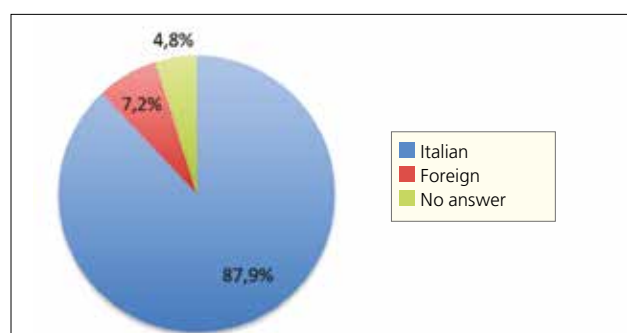


FIG. 3B What is your nationality?

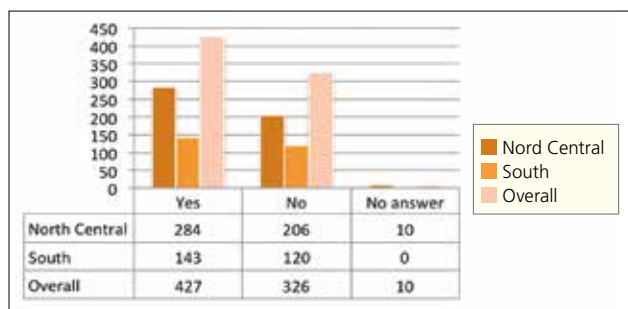


FIG. 4A Did you undergo a dental examination in the 6 months prior to the start of pregnancy?

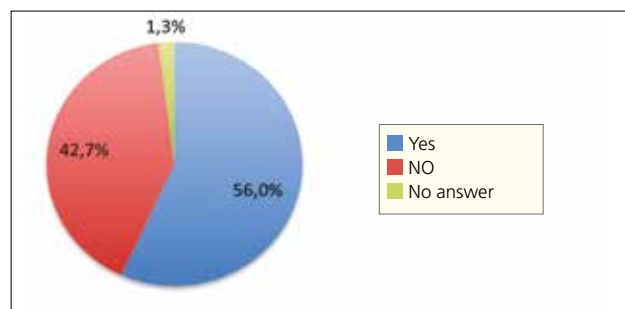


FIG. 4B Did you undergo a dental examination in the 6 months prior to the start of pregnancy?

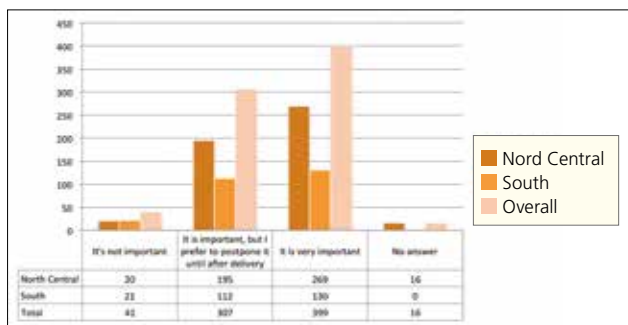


FIG. 5A What importance did you/do you give to the care of your mouth during the period of pregnancy?

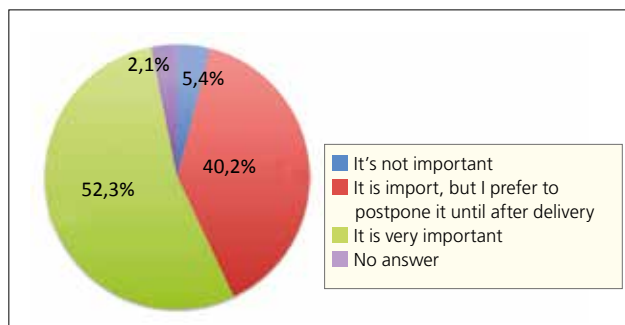


FIG. 5B What importance did you/do you give to the care of your mouth during the period of pregnancy?

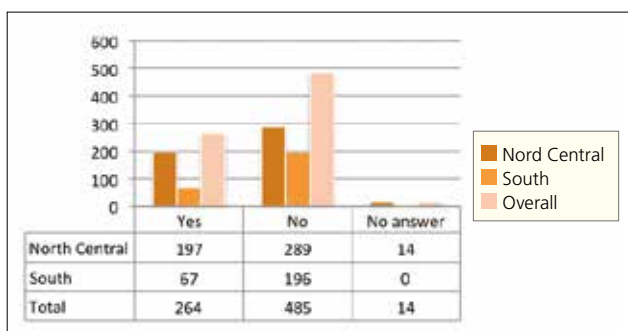


FIG. 6A During pregnancy, did you have periodic dental visits?

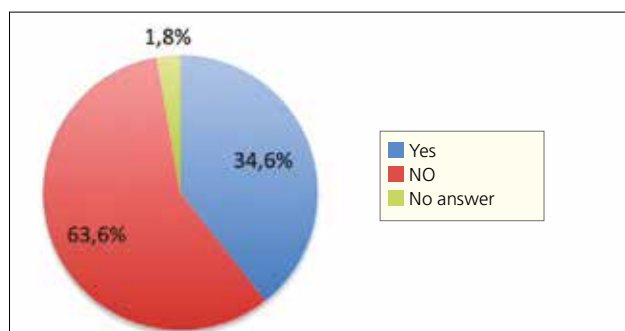


FIG. 6B During pregnancy, did you have periodic dental visits?

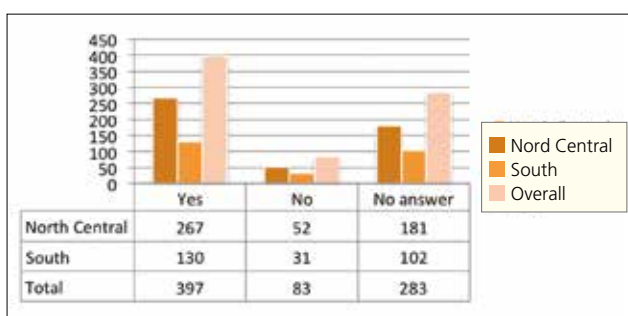


FIG. 7A Do you feel safe for yourself and your child to be treated during pregnancy?

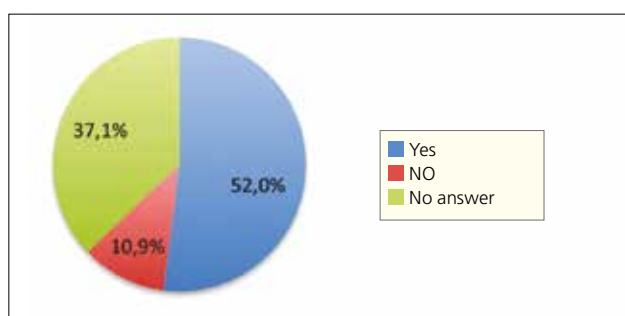


FIG. 7B Do you feel safe for yourself and your child to be treated during pregnancy?

with any health issues related to oral examination in the perinatal period, and although several years have elapsed it is doubtful that answers to certain questions were influenced by these factors. The first finding that can be highlighted concerns, without a doubt, the age of the mothers in Italy. As evident from the results, over 40% of the sample was over 35 years old. The choice to become a mother later in life can certainly

be linked to the education level and employment rate of young women with a notable difference between Northern (higher average age) and Southern Italy (lower average age). There were no significant differences between the North and South in mothers' awareness of dental problems: 42.7% did not have a dental check-up in the six months prior to pregnancy. A similar percentage, 40.2%, of women would have preferred to

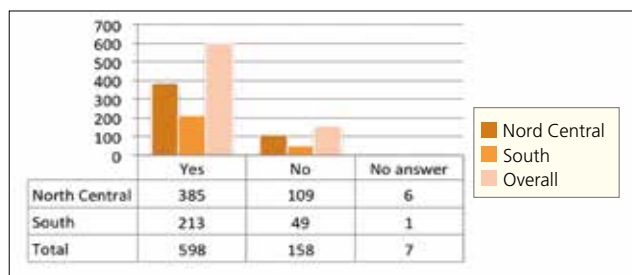


FIG. 8A During pregnancy, hormonal changes can lead to changes in the condition of the gums resulting in bleeding. Are you aware of this?

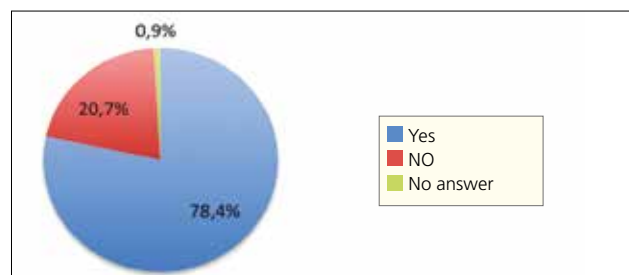


FIG. 8B During pregnancy, hormonal changes can lead to changes in the condition of the gums resulting in bleeding. Are you aware of this?

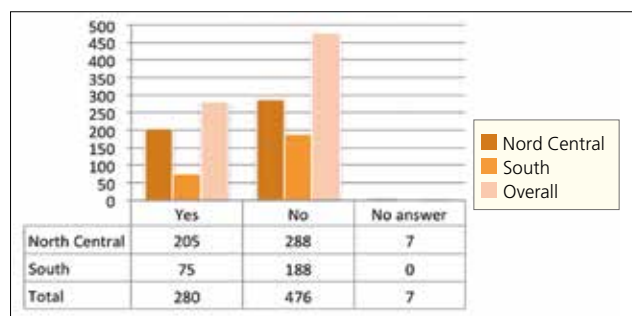


FIG. 9A Did you ask the dentist about any precautions to be taken during pregnancy?

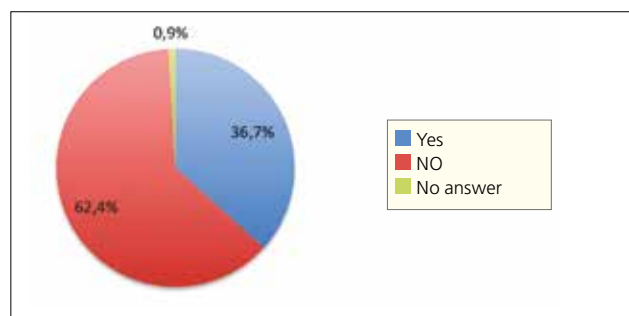


FIG. 9B Did you ask the dentist about any precautions to be taken during pregnancy?

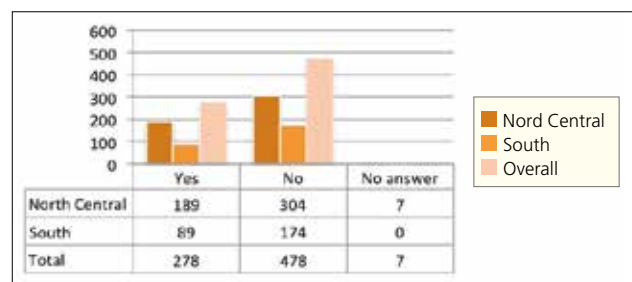


FIG. 10A Are you aware of the fact that children born to women with poor oral hygiene and predisposed to caries are more likely to develop cavities themselves?

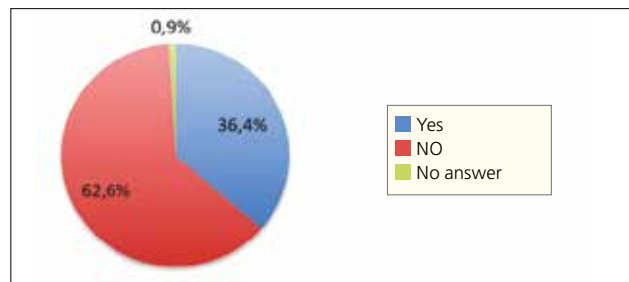


FIG. 10B Are you aware of the fact that children born to women with poor oral hygiene and predisposed to caries are more likely to develop cavities themselves?

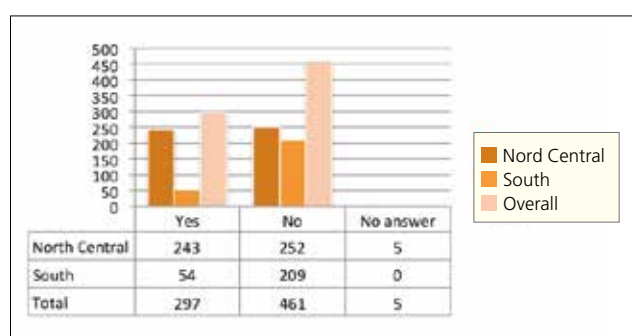


FIG. 11A Did you ask the dentist about oral hygiene measures to be taken with your child?

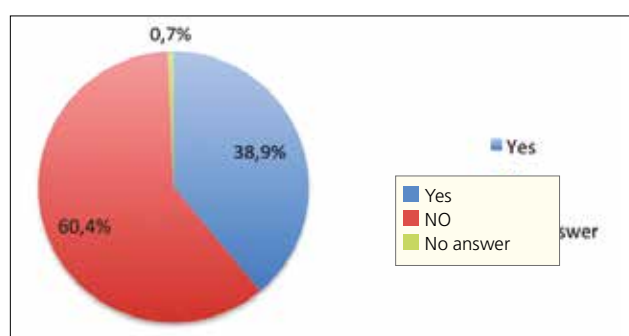


FIG. 11B Did you ask the dentist about oral hygiene measures to be taken with your child?

postpone any dental treatment until after delivery. There is a two-fold problem if pregnant women are reluctant to go to the dentist for fear of causing harm to themselves or their unborn child, or they do not have oral health conditions checked before pregnancy. This is a symptom of ineffective or absent education about the importance of the prevention of oral cavity pathologies [Bogges, 2008]. The trend is sealed by the fact

that 63.6% of the subjects did not have dental checkups during pregnancy. This latter figure would not be so worrying if all the young women had planned a check before pregnancy. Among the other potential reasons for a lack of dental care, is fear of the dentist, since, contrary to the trend, more than half of the sample considered it safe to undergo treatment during the gestation period. Often, the reluctance is therefore not due to

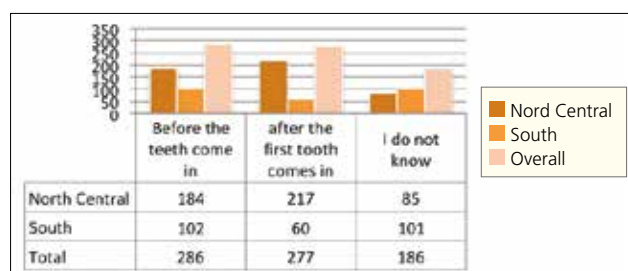


FIG.12A At what age do you think it is important to start cleaning your child's mouth?

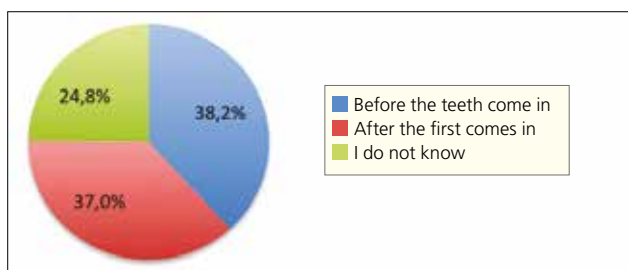


FIG.12B At what age do you think it is important to start cleaning your child's mouth?

a fear of the risk associated with dental treatments for women or the unborn child.

Based on the results of this research, there is no room for doubt: pregnant women and young mothers do not go to the dentist enough, either to prevent or to treat problems in the perinatal period and are most often going only for urgent issues. However, despite the lack of contact with a professional, they claim to know about the increased risk of gingivitis in pregnant women and subsequent bleeding (78.4%) [Polyzos et al., 2010; Scannapieco et al., 2003]. The figure, however, is in stark contrast to the next one: only 36.7% of the sample asked the dentist about any precautions to be taken during pregnancy. There is a gap in the data between the awareness of potential gum issues and the request for advice from the dentist. It would be interesting to verify where the presumed awareness came from, since only in a few cases were questions asked of a professional. It is reasonable to infer that the source of information may come from channels that are easy and quick to use, such as the internet or word of mouth, which can generate erroneous beliefs. The problem is even more serious as patients do not consider the dentist as an authoritative source of information for their own or their child's oral health. Paediatricians do not always provide this kind of information to mothers. In fact, the percentage of mothers who asked the dentist for information about oral hygiene practices for their child is very scarce and is comparable to the previous data, which regards advice on precautions during pregnancy. Even if, in this case, an aggravating circumstance must be considered, 62.6% of the sample does not know about the risk of vertical transmission due to carioreception [US Preventive Services Task Force, 2014; American Academy of Pediatric Dentistry, 2011]. Furthermore, the percentage of mothers who request information regarding their child's oral health is even lower in Southern Italy. This trend is also attributable to the higher degree of social vulnerability in the South [Campus et al., 2004]. In fact, socially vulnerable subjects, in addition to precarious home oral hygiene also have, on average, a reduced monitoring of the mouth [Hede et al., 2019] which justifies limited contact with a dentist. There is also inadequate information regarding the child's oral care: a quarter of the sample does not

know when to start cleaning the baby's mouth and only 38.2% do it before deciduous teeth have erupted.

Conclusions

This survey on the habits of women in the perinatal period and during the first years of their child's life demonstrates a transversal problem: young women too often tend to underestimate the importance of oral care, even before pregnancy, and this habit lasts throughout gestation and continues even after the child's birth. Visits to the dentist are often limited to urgent treatments and the awareness of preventative strategies is lacking, and this could have pathological repercussions, including caries or periodontitis. The sources of incomplete information should be managed, and pregnant women should be given adequate education through doctors, healthcare providers, social workers, childbirth courses, etc.

With a virtuous attitude by mothers, the support of health professionals, and adequate information, it is possible to reduce the incidence of pregnancy-related diseases for mothers and their children.

Conflict of interest

The authors declare no conflict of interest.

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