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Knowledge, attitude and practices of pediatricians regarding the prevention of oral diseases in Italy

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Abstract

Background: Pediatricians are in an ideal position to advise families about the prevention and management of oral diseases in children. The objective of the study was to determine knowledge, attitude, and practices regarding the prevention of oral diseases among pediatricians in Italy.

Methods: A systematic random sample of 1000 pediatricians received a questionnaire on socio-demographic and practice characteristics; knowledge on risk factors; attitude and practices towards the prevention of oral diseases.

Results: A total of 507 pediatricians participated. More than half knew the main risk factors for oral diseases and this knowledge was higher in primary care pediatricians ($p = 0.007$), in those with a higher number of hours worked per week ($p = 0.012$), and who believed that oral diseases may be prevented ($p = 0.017$). Pediatricians with higher knowledge about the main risk factors ($p = 0.006$) believe that they have an important role in preventing oral diseases and that they can perform an oral examination. Almost all (89%) prescribed fluoride supplements and those younger ($p = 0.016$), with a higher number of patients seen in workday ($p = 0.001$), with longer practice activity ($p = 0.004$), those who believe that fluoride is effective in preventing caries ($p < 0.0001$), and who learned about prevention from scientific sources ($p = 0.002$) were more likely to prescribe fluoride. One-fourth and 40.6% provides and recommends a dental visit once a year and primary care pediatricians ($p = 0.014$) and those who believed that routine visit is important in preventing oral diseases ($p < 0.0001$) were more likely to recommend a dental visit once a year.

Conclusion: The results showed a lack of knowledge among pediatricians although almost all believed that they had an important responsibility in preventing oral diseases and provided an oral examination.

Background

Primary preventive strategies for oral health are an essential public health priority since dental caries is, for exam-

ple, the most common chronic disease among children worldwide. Experts recommend that initiatives begin with

very young children to promote positive outcomes during childhood and subsequent adulthood.

Because of their frequent contact with families for routine preventive visits in the child's first few years of life, pediatricians are in an ideal and unique position to advise families about the prevention of oral diseases in their children. The American Academy of Pediatrics emphasizes that paediatric health care professionals should be trained to perform an oral health risk assessment on all children beginning at 6 months of age [1,2].

To our knowledge, there is little published literature that focuses on the extent to which pediatricians participate, specifically as to their knowledge, attitudes, and practices with regard to oral health preventive programs. Clearly, such studies seem important because the attitude and the knowledge of pediatricians may enhance or impede the implementation and eventual success of a preventive program. Therefore, the purpose of this survey was to characterize what is known about knowledge, attitude, and current practices regarding the prevention of oral diseases among pediatricians in Italy.

Methods

Participants

This was a national cross-sectional survey of a study sample from the alphabetical list of the 2744 members of the Italian Pediatrician Cultural Association, including nearly all pediatric primary care providers in Italy. From their list of membership, a systematic random sample of 1000 pediatricians was selected. The study was conducted with survey methods involving mailing with follow-up. A complete anonymous self-administered questionnaire, with an endorsement letter providing a description of the study, a pre-addressed and postage-paid envelope to facilitate the return of the complete questionnaire, was sent to all sampled pediatricians in December 2004. A system of numbers identifying returned envelopes, known only to the research team, helped to identify the non-responders and required follow-up. Pediatricians who did not respond to the initial mailing were sent an additional follow-up reminder with another copy of the questionnaire and postage-paid envelope. After the second mailing, the identifying key was destroyed, thus maintaining total confidentiality for all respondents. In an attempt to maximize the response rate, telephone calls to encourage participation were made to all pediatricians before the initial and the follow-up mailing. A total of 120 pediatricians could not be contacted by telephone because their numbers were not available. Telephone follow-up to encourage participation continued until March 2005. Informed written consent for their participation was obtained and confidentiality of responses was assured.

Extensive preadministration piloting was conducted including interviews with pediatricians to ensure that the instrument was comprehensible and valid. Items were included in the survey instrument only if there was near universal consensus on their meaning.

Survey instrument

The questionnaire was divided in five sections and comprised a series of questions pertaining to socio-demographic and practice characteristics; knowledge regarding the risk factors for oral diseases; attitude towards the prevention of oral diseases; management practice in regard to preventive measures for oral diseases; and information about oral diseases ' [see Additional file 1]'.

The demographic and practice portion of the instrument included questions on age, gender, number of years in clinical practice, type of primary practice, number of hours spent in a typical week in direct patient care, and number of patients seen in a typical workday. For assessing knowledge of the main risk factors of dental caries, gingivitis, and malocclusion, respondents were asked a series of questions and they indicated their level of agreement or disagreement on a 3-point Likert scale. For attitude towards the prevention of oral diseases, respondents were asked also to use a 3-point Likert scale (rating scale from 1 to 3, 1 = agree and 3 = disagree) in a limited number of questions exploring pediatrician agreement/disagreement with the following statements: dental caries, gingivitis, and malocclusion may be prevented; the pediatrician has an important role in the prevention of oral diseases; the pediatrician should provide an oral health examination; oral hygiene, fluoride supplement, and routine dental visit are effective in prevention. In the fourth set of questions, we assessed management practice by asking pediatricians if during well-child care visits they perform a dietary habits assessment, an oral health examination, and how frequently they recommend a dental visit; if they recommend to parents or other intimate caregiver dietary fluoride supplements and the fluoride for day recommended; and if they provide counselling and other educational materials about interventions to prevent or control oral diseases. Questions pertaining to management practice were close ended with nominal or categorical (yes or no) responses or respondents were asked to rate, on a five-point Likert scale that ranged from never to always, how frequently they advice the parents/caregiver. Finally, in the fifth section pediatricians were asked whether they regularly received information about the prevention of oral diseases and how useful are sources of such information.

Statistical analysis

Multivariable logistic regression models were used to identify characteristics that predicted the outcomes of

interest. Four models were developed including those independent variables that were considered potentially associated with the following outcomes: knowledge of the main risk factors for dental caries, gingivitis, and malocclusion (Model 1); belief that pediatricians play an important role in preventing oral diseases and that they can perform an oral health examination (Model 2); pediatrician prescribe dietary fluoride supplements (Model 3); pediatrician recommend an oral health examination once a year (Model 4). In Model 1, pediatricians were divided into those who knew the main risk factors for dental caries, gingivitis, and malocclusion versus all others; in Model 2, those that had a positive attitude in their role in preventing oral diseases and that they can perform an oral health examination versus all others; in Model 3, grouped into those who prescribe dietary fluoride supplements versus all others; in Model 4, they were divided into those who recommended an oral health examination once a year versus all others. The following predictor variables were included in all models: gender (male = 0, female = 1), age ($\leq 40 = 1$, 41–45 = 2, 46–50 = 3, 51–55 = 4, $>55 = 5$), primary practice type (no = 0, yes = 1), number of years in practice (continuous), number of hours worked per week ($\leq 30 = 1$, 31–40 = 2, $>40 = 3$), number of patients seen in a typical workday ($\leq 10 = 1$, 11–15 = 2, 16–20 = 3, 21–25 = 4, $>25 = 5$), scientific journals, courses, and associations as sources of information about the prevention of oral diseases (no = 0, yes = 1), and the need of more information about the prevention of oral diseases (no = 0, yes = 1). The following variables were also included: whether dental caries, gingivitis, and malocclusion may be prevented (no = 0, yes = 1) (model 1); knowledge of the main risk factors for dental caries, gingivitis, and malocclusion (no = 0, yes = 1) (models 2 and 4); performing an oral health examination once a year (no = 0, yes = 1) and dietary habits assessment (no = 0, yes = 1) (model 2); the attitude that fluoride supplement is important for the prevention of dental caries (no = 0, yes = 1) (model 3); the attitudes that routine dental visit is important in preventing oral diseases (no = 0, yes = 1) and that a pediatrician has an important role in preventing oral diseases (no = 0, yes = 1) (model 4). The significance level for variables entering the models was set at 0.2 and for removing at 0.4. Association between the characteristics and outcomes was expressed as odds ratios (ORs) and 95% confidence intervals (CIs) of the adjusted ORs were computed using test-based methods. The level of significance was set at $\alpha = 0.05$, and all p values were interpreted in a two-tailed manner. Respondents and non-respondents were compared according to the available characteristics by using appropriate test statistics. Statistical analyses were conducted using the Stata 8.1 software program [3].

Results

Among the 1000 potential respondents, 38 surveys were returned but not included because the practitioner was ineligible (eg, retired or no longer in clinical practice). The final sample size included 962 pediatricians and 507 were the respondents for an overall response rate of 52.7%. Demographic and practice characteristics of the respondents pediatricians were similar to those of the non-respondents, since none of the between-group comparisons were statistically significant (Table 1). Thus, the two groups were comparable.

Pediatricians' were questioned about the risk factors for oral diseases. As seen in Figure 1, nearly all correctly identified that sugar consumption (95.8%) increases the risk of caries, that inadequate cleaning of the teeth (98.6%) and incorrect toothbrushing techniques increases the risk of caries (92.3%) and gingivitis (86.6%), and whether malpositioned teeth (91%) was a risk factor for malocclusion. However, some pediatricians had some misperceptions, since, for example, more than two-thirds (71%) disagreed with or were uncertain about an item in the survey that asserted that bottle feeding was a risk factor for malocclusion. Overall, more than half (56%) of the respondents knew all the main risk factors of dental caries, gingivitis, and malocclusion. In an attempt to further elucidate the contribution of several variables, multivariate logistic regression analysis was conducted. The OR of some variables was significantly more than 1.0, indicating that the factors associated with a significant increased likelihood of knowledge about the main risk factors for oral diseases were practice setting, hours worked for week, and the held belief that dental caries, gingivitis, and malocclusion may be prevented. Indeed, pediatricians involved in primary care activity (OR = 0.53; 95% CI = 0.33–0.84, $p = 0.007$), those with more hours spent in a typical week in direct patient care (OR = 1.29; 95% CI = 1.06–1.57, $p = 0.012$), and those who believed that oral diseases may be prevented (OR = 1.56; 95% CI = 1.08–2.26, $p = 0.017$) have a higher level of knowledge (Model 1 in Table 2).

Table 3 shows the pediatricians' attitudes about their role in preventing oral diseases in children. Almost all believed that it was their responsibility to prevent oral diseases (94.8%) and to conduct an oral examination (96.6%). There was also a positive attitude that caries can be prevented (95%), but 28.6% and 44.8%, respectively, were uncertain or disagreed about the preventability of gingivitis and malocclusion. Multiple logistic regression was used to assess the independent association with pediatricians' attitudes of several variables and the results showed that pediatricians with a higher level of knowledge about the main risk factors for oral diseases (OR 3.36; 95% CI 1.41–8.04, $p = 0.006$) were more likely to believe that they have an important role in preventing oral diseases and

Table 1: Comparison of selected characteristics between respondents and non-respondents

Characteristic	Respondents %	Non-respondents %
Gender		
Male	37.7	32.9
Female	62.3	67.1
		$\chi^2 = 2.27, 1 \text{ df}, p = 0.13$
Age group, years	(49.5 ± 6.5)	(48.8 ± 6.4)
≤40	7.1	7.8
41–45	19.3	18.5
46–50	35.7	36.3
51–55	25.3	25.9
>55	12.6	11.5
		$\chi^2 \text{ for trend} = 0.07, 1 \text{ df}, p = 0.79$
Number of years since graduation		
≤15	10.5	13.7
16–20	22.1	22.6
21–25	32.5	31.9
26–30	23.7	22.2
>30	11.2	9.6
		$\chi^2 \text{ for trend} = 1.78, 1 \text{ df}, p = 0.18$
Practice setting		
Primary care	81.3	78.2
Private	10.1	10.9
Hospital/University	8.6	10.9
		$\chi^2 = 0.81, 2 \text{ df}, p = 0.66$
Number of years in practice	(17 ± 7.7)	(18.2 ± 6.9)
≤10	19.3	15.7
11–15	25.9	24.5
16–20	26.4	23.1
>20	28.4	36.7
		$\chi^2 \text{ for trend} = 2.77, 1 \text{ df}, p = 0.1$
Number of hours worked per week		
≤30	36	34
31–40	40.8	48.3
>40	22.2	17.7
		$\chi^2 \text{ for trend} = 0.28, 1 \text{ df}, p = 0.6$
Number of patients seen in a workday	(19.8 ± 8)	(20.5 ± 7.8)
≤ 10	14.8	12.2
11–15	21	22.5
16–20	30.7	31.3
21–25	14	10.2
>25	19.5	23.8
		$\chi^2 \text{ for trend} = 0.45, 1 \text{ df}, p = 0.5$

In brackets the mean and standard deviation

that they can perform an oral health examination (Model 2 in Table 2).

Current behaviours of the pediatricians are reported in Table 4. Almost all (88.4%) reported that they assess children's dietary habits and 76.1% provided educational materials to parents/caregivers about interventions to control oral diseases. Approximately 89% prescribed dietary fluoride supplements and 50% were accustomed to modifying the prescription in relation to fluoride level in the community drinking water. Logistic regression analyses performed on the responses of pediatricians who pre-

scribe dietary fluoride supplements indicated that, after adjusting for several variables, the belief that fluoride is effective in preventing dental caries had the strongest relationships with this prescription (OR 17.87; 95% CI 8.3–38.47, $p < 0.0001$). Age, years of activity, number of patients seen in a workday, and source of information also significantly predicted this behaviour. Pediatricians who were younger (OR = 0.61; 95% CI 0.41–0.91, $p = 0.016$), had more years of practice (OR = 1.08; 95% CI 1.02–1.17, $p = 0.004$), had a higher number of patients per workday (OR = 1.69; 95% CI 1.24–2.31, $p = 0.001$), and who learned about the prevention of oral diseases

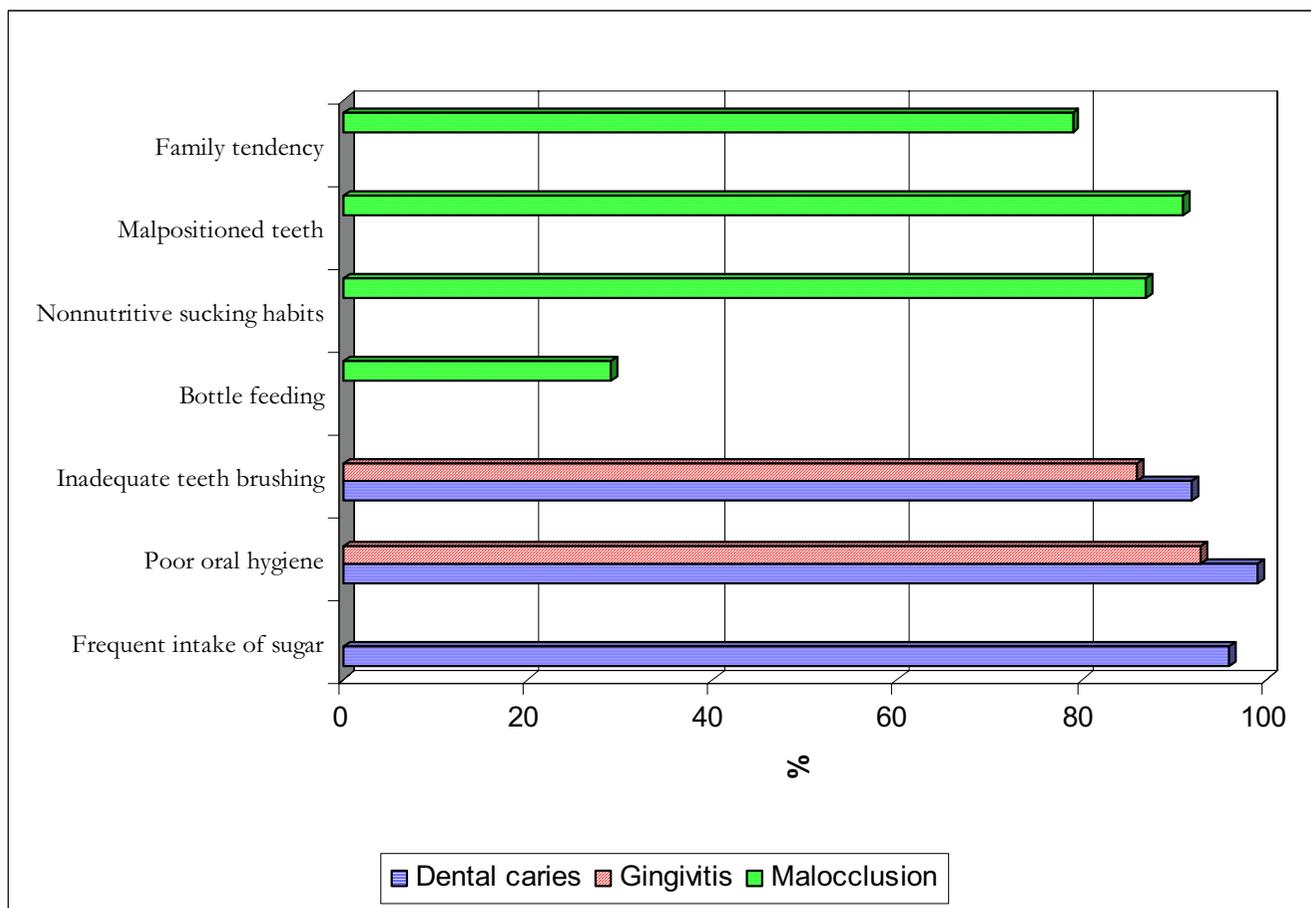


Figure 1
Pediatricians' knowledge about the risk factors of oral diseases.

from scientific journals, courses, and associations (OR = 4.35; 95% CI 1.74–10.86, $p = 0.002$) were significantly more likely to prescribe fluoride supplements (Model 3 in Table 2). Correct dietary fluoride supplements to children who drank water with low fluoride level was indicated by 85.1% and 83.6% for a child until age 2 years and for those from 6 years, respectively; whereas, only 27.1% and 36.6% for children aged 2 to 4 years and from 4 to 6 years, respectively. With respect to screening procedures, almost all (96.5%) provide an oral examination on their patients and among the 280 pediatricians who indicated the frequency of oral examination, one-fourth and more than half reported that they provide the examination once a year and every six months, respectively; whereas, 40.6% reported that they recommend a dental visit once a year. Results of the regression analysis demonstrated that those in primary care activity (OR = 0.54; 95% CI = 0.33–0.88, $p = 0.014$) and those who believed that routine dental visit is important in preventing oral diseases (OR = 7.39; 95% CI 3.08–17.71, $p < 0.0001$) were more likely to recommend a dental visit once a year (Model 4 in Table 2).

Pediatricians learned about the prevention of oral diseases primarily from scientific journal (86.5%), educational courses and meetings (58.3%), and associations (12.4%). A vast majority indicated that they were interested in obtaining more information (75%).

Discussion

This is the first study that has analyzed data from a large national random sample of pediatricians in Italy for the purpose of evaluating the knowledge, attitudes, and practices in the prevention of oral diseases. Our results provide valuable stimulus and perspectives toward the formulation of relevant oral health education programs for pediatricians.

In interpreting the findings of the present study, it is important to acknowledge possible limitations. First, it is the nature of most studies of physician behaviour that the cross-sectional data we present did not allow investigation of potential links between level of knowledge and attitude, to the extent of "best" practice used by pediatricians,

Table 2: Logistic regression models results

Variable	OR	SE ^a	95% CI	P
Model 1. Knowledge of the main risk factors of oral diseases				
Log likelihood = -335.4, $\chi^2 = 24.61$ (5 df), $p = 0.0002$				
Primary practice type	0.53	0.12	0.33–0.84	0.007
Number of hours worked per week	1.29	0.13	1.06–1.57	0.012
Beliefs that oral diseases may be prevented	1.56	0.29	1.08–2.26	0.017
Gender	1.41	0.27	0.97–2.05	0.07
Sources of information about the prevention of oral diseases	1.5	0.45	0.83–2.71	0.17
Model 2. Attitude that pediatricians have an important role in preventing oral diseases and that they can perform an oral health examination				
Log likelihood = -82.40, $\chi^2 = 10.22$ (3 df), $p = 0.017$				
Knowledge of the main risk factors of oral diseases	3.36	1.49	1.41–8.04	0.006
Perform an oral health examination once a year	0.6	0.26	0.25–1.43	0.25
Number of patients seen in a workday	0.87	0.14	0.63–1.19	0.39
Model 3. Prescribing dietary fluoride supplements				
Log likelihood = -107.16, $\chi^2 = 89.53$ (6 df), $p < 0.00001$				
Attitude that fluoride supplementation is important for the prevention of dental caries	17.87	6.99	8.3–38.47	<0.0001
Number of patients seen in a workday	1.69	0.26	1.24–2.31	0.001
Sources of information about the prevention of oral diseases	4.35	2.03	1.74–10.86	0.002
Years in practice	1.08	0.28	1.02–1.14	0.004
Age	0.61	0.12	0.41–0.91	0.016
Primary practice type	0.44	0.18	0.19–1.01	0.054
Model 4. Recommend an oral health examination once a year				
Log likelihood = -321.81, $\chi^2 = 41.33$ (5 df), $p < 0.00001$				
Attitude that routine dental visit is important in preventing oral diseases	7.39	3.29	3.08–17.71	<0.0001
Primary practice type	0.54	0.14	0.33–0.88	0.014
Gender	0.69	0.13	0.47–1.01	0.059
Number of hours worked per week	1.2	0.12	0.98–1.47	0.078
Attitude that pediatricians have an important role in preventing oral diseases	1.65	0.71	0.71–3.87	0.25

^a Standard Error

so causality cannot be proven. Second, for the self reporting aspect of the study, we could not determine whether reported practices reflected actual clinical practices, so it too is possible that social desirability biases may permit respondents to over- or underreport attitude and practice. Although examples of both kinds of reporting have been identified, the more prevalent and serious problem in our estimation is overreporting, and supposedly this hindrance to objectivity applies here as well. If so, it would paint an even more negative picture of the current knowledge, attitude, and practice than has been portrayed. Results based on self-reported data are considered valid in large-scale studies when recall is restricted to a short period of time and when anonymity is ensured. This survey met these criteria. Third, our response rate was 53% and the survey was nationwide. This rate is consistent with other mailed physician surveys in which the typical response is approximately 50% [4,5]. The actual response rate might have been higher if correct mailing addresses were supplied, but this was impossible due to inconsistent post office delivery. Selection bias is always a concern and, although the wish to avoid such bias is the main rationale

for intervention studies, we have examined the impact of non-responding pediatricians. The best approach that has been suggested to understand the role of non-response bias is to use variables known for a sufficiently large and representative sample of non-responders and these can then be compared with responders [6]. We were able to compare baseline demographic and practice variables of responders and non-responders. Our results indicate that all characteristics of the two groups' exhibit the same pattern with no statistically significant differences, so we infer there was no selection bias in these data and the findings may be representative of all population of pediatricians. Despite these limitations, our results have important implications, since the representative and unbiased sample of pediatricians used in the study adds significantly to this area of research and illuminates a more generalizable picture of the knowledge, attitude, and the behavioural context regarding the prevention of oral diseases in Italy.

In this study, the majority of pediatricians acknowledge that exposure to sugar causes caries and they correctly assume that inadequate cleaning of the teeth is responsi-

Table 3: Respondents' attitudes towards the prevention of oral diseases

	% Agree	% Uncertain	% Disagree
Oral hygiene is important in preventing dental caries	98.8	1	0.2
Pediatrician should provide an oral cavity health examination	96.6	3	0.4
Pediatrician has an important role in the prevention of oral diseases	94.8	5	0.2
Dental caries may be prevented	95	5	-
Routine dental visit is important in preventing oral diseases	88.7	8.1	3.2
Fluoride supplement is important in preventing dental caries	85	13.2	1.2
Gingivitis may be prevented	71.4	27.4	1.2
Malocclusion may be prevented	55.2	36.5	8.3

ble for higher risk of caries and gingivitis. More problematic are the overall gaps in pediatricians' knowledge of other risk factors. For example, 71% disagreed or were uncertain that bottle feeding is a risk factor for malocclusion. Since this behaviour is very common, pediatricians must recognize this fact. Any pediatrician who is aware that bottle feeding is a risk factor will be more likely to play a role in children's oral health than another who is unaware. From the public health perspective, these are crucial matters, implying critically that pediatricians may

not be too familiar with specific issues and that more needs to be done to educate them. The observation about variations in acquired knowledge according to practice setting is important because those in primary care are more likely than hospital/university-based pediatricians to know the main risk factors for oral diseases. This finding may be explained by the fact that those in primary care are involved practically in all settings, whereas those in other practice settings have seen their scope of practice increasingly narrow.

Table 4: Respondents' behavior towards the prevention of oral diseases

	N	%
Dietary habits assessment		
Yes	448	88.4
No	59	11.6
Recall interval between routine dental examinations		
Once a year	206	40.6
At least every six months	57	11.2
In presence of a problem	244	48.1
Performing an oral health examination ^a		
No	10	3.5
Once a year	73	25.2
At least every six months	166	57.2
In presence of a problem	12	4.1
On mother request	29	9
Recommend dietary fluoride supplementation		
Yes	451	89
No	56	11
Correct dosage of fluoride supplementation		
Until age 2 years	369	85.2
From age 2 to 4 years	116	27.1
From age 4 to 6 years	153	36.6
From age 6 to 16 years	337	83.6
Provide educational materials to parents about interventions to prevent or control diseases		
Never	121	23.9
Rarely	113	22.3
Sometimes	182	35.9
Often	69	13.6
Always	22	4.3

^a All participants responded to the question and among the 497 who performed the oral examination only 280 indicated the frequency

This study helps to describe the attitudes that pediatricians have about oral health care for their children and thus their attitudes are important to understand. Our results emphasize that almost all of the respondents believed that they have a responsibility to prevent oral diseases and this study confirms previous findings in a sample of pediatricians from the American Medical Association [7]. A more positive attitude towards their role in preventing oral diseases was observed in those pediatricians with a higher level of knowledge of the main risk factors for oral diseases.

Almost all respondents (89%) prescribed dietary fluoride supplements and several factors predicted this behaviour: pediatrician's age, numbers of patients per workday, experience, source of information, and beliefs that fluoride is effective in preventing caries in children. Pediatricians with more years of experience more likely will prescribe fluoride supplements. This finding may reflect the changing nature of the practice and training of pediatricians in Italy. Those pediatricians active for many years were trained and began practice in an era in which they provided care for their patients in virtually all settings, whereas in recent decades, pediatricians are now trained in residency programs where the scope of practice has become limited, wearing away their ability to provide comprehensive care to their patients. The pediatricians were also asked to indicate the correct dietary fluoride supplements to children who drank water with low fluoride level and our findings were in agreement with the results observed among primary care faculty pediatricians

in the United States [8]. Moreover, it should be stressed that pediatricians should be more accurately informed about techniques of individualized fluoridation, and this is relevant to public health because physicians who are not aware may form opinions about inappropriate supplementation, leading to poor decision making [9]. For example, they should inform parents to use a pea-sized amount of toothpaste for their children aged <6 years and take care to see that they do not eat it.

Similar to previous studies, we found that almost all pediatricians provided an oral examination on their patients and one-fourth of those who indicated the frequency provide the examination once a year. In the United States, 98.9% of paediatric care providers frequently or occasionally examine a child's teeth for signs of dental decay [10] and 47% saw early childhood caries in their practice at least once a month [7]. Finally, three-fourths of the pediatricians we surveyed reported that they provide educational materials to parents/caregivers about interventions to prevent or control oral diseases. Our result is markedly lower than the value of 83.7% of general pediatricians in the United States who reported providing anticipatory guidance in oral health [11]. These data which underscore the gap between pediatricians practice and acquired information about oral health are particularly troubling given that these counselling rates were well below recommended guidelines promulgated by both medical and dental organizations [1,2]. Pediatricians are those caregivers mainly responsible for the supply of information to parents and they have multiple opportunities to intervene on the issue of oral health among children and adolescents. Pediatricians who do not advise that the prevention of oral diseases is very important may be sending signals that this prevention is not something that mothers should value highly. These communication gaps may represent important missed opportunities for promoting appropriate intervention including screening, counselling, and education in routine clinical risk assessments.

Conclusion

In conclusion, our study raises the issue of lack of knowledge of the main risk factors for oral diseases although almost all pediatricians believed that they had an important responsibility in preventing oral diseases in children and provided an oral examination on their patients.

Competing interests

The author(s) declare that they have no competing interests.

Authors' contributions

GDG participated in the design of the study, data collection, statistical analysis and interpretation of the data. CGAN participated in the statistical analysis and interpretation

of the data. AM participated in the statistical analysis. IFA, the principal investigator, designed the study, was responsible for the data collection, statistical analysis and interpretation, and wrote the article.

Additional material

Additional file 1

QuestionnaireBMC : Questionnaire used in the survey

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