

## Belief in Myths about Oral Health among Indonesian Mothers

Rizky Pontiviana Akbari<sup>1</sup>, Febriana Setiawati<sup>1</sup>, Diah Ayu Maharani<sup>1\*</sup>

1. Department of Preventive and Public Health Dentistry, Faculty of Dentistry, Universitas Indonesia.

### Abstract

Myth belief might have an impact on oral health, especially in mothers. The aim of this study was to describe the myths related to oral health and the belief in such myths by pregnant women, breastfeeding mothers, and mothers with preschool children in Indonesia.

A cross-sectional study was conducted using a self-administered online questionnaire. The questionnaire was designed to collect data on the sociodemographics and medical histories of mothers, oral health histories of mothers and their children, oral health behavior during pregnancy, and related myths and beliefs. The identified myths and associated variables were then analyzed. A total of 895 respondents participated; however, only 801 respondents were eligible for inclusion in the analysis. Women who were housewives, had a lower educational levels, and had not visited a dentist before or during pregnancy tended to believe in myths.

In Indonesia, belief in myths related to oral health exists and may potentially be a barrier to optimizing maternal and child oral health, and health in general. Educating the community about myths and facts in oral health is encouraged.

**Clinical article (J Int Dent Med Res 2022; 15(3): 1286-1289)**

**Keywords:** myths, Indonesia, oral health.

**Received date:** 15 July 2022

**Accept date:** 29 August 2022

### Introduction

Many myths still exist, especially in Asian countries, and they have an impact on society, including on oral care. Myths are defined as notions and stories that many people believe, yet the validity is still unconfirmed. Misconceptions about medical practices as well as disease prevention have become more common recently, and this is a cause for concern because such misconceptions can have significant impacts on people's behavior toward health issues that can potentially cause disease, prevent certain medical research, or influence medical treatment compliance.<sup>1</sup> In this context, myths are imaginary substances and misguided beliefs.<sup>2</sup> There are several factors associated with myth belief, such as a low educational level, ancestral beliefs, and

misconceptions within a society. Generally, myths are passed on from one generation to the next, and when they are rooted within a society, it is challenging to break the chains of myth sharing and belief. In terms of oral health care issues, society-wide education is a key requirement of any attempt to change the paradigm and behaviors and eliminate myths with potentially catastrophic impacts.<sup>3</sup>

A recent study showed that Indonesia has the highest prevalence (90%) of early childhood caries (ECC) among five-year-old children, with a decay-missing-filled teeth score of 8.1.<sup>4</sup> It is well known that ECC is one of the most common oral health issues in preschool children. It has also been shown that some steps can be taken during pregnancy to prevent ECC. In fact, pregnancy is a perfect time to develop an ECC-prevention program, considering that maternal health and behavior factors can subtly influence a child's oral health.<sup>5</sup> Numerous research studies have shown that there is a connection between the poor maternal oral health of a pregnant woman, her medical history during pregnancy, and the baby's oral health after birth; hence, it is important for pregnant women to visit the dentist regularly.<sup>6</sup> Furthermore, prompt breastfeeding of newborn babies is highly recommended for

#### \*Corresponding author:

Professor Diah Ayu Maharani, BDS, DDS, PhD  
Department of Preventive and Public Health Dentistry  
Faculty of Dentistry, Universitas Indonesia  
Jalan Salemba No. 4, Jakarta, Indonesia 10430  
E-mail: [diah.ayu64@ui.ac.id](mailto:diah.ayu64@ui.ac.id); [raniabdillah@gmail.com](mailto:raniabdillah@gmail.com)  
<https://scholar.ui.ac.id/en/persons/diah-ayu-maharani>

postnatal nursing mothers. Breastfeeding is the best gift a mother can give to her child, and it provides the ideal early food for infants. The relationship between breastfeeding and a reduction in the chance of developing ECC is widely accepted, as well as its relationship with various other health issues in children.<sup>7</sup> Therefore, the aim of this study was to identify the myths related to maternal oral health care and the factors influencing myth belief among Indonesian mothers.

### Materials and Methods

This cross-sectional study was conducted in 2022 in Indonesia and was approved by the Ethics Committee of the Faculty of Dentistry, Universitas Indonesia, Jakarta, Indonesia (Protocol No. 030320322). An online self-administered questionnaire was distributed using social media. The inclusion criteria were women who were pregnant, breastfeeding, or had children under 5 years of age. The questionnaire was divided into the following sections: informed consent, personal data of respondents, medical and oral health history, and myths about oral health, which consisted of 12 myth statements. Responses to the myth statements were recorded using a four-point Likert scale (1, very disagree; 2, disagree; 3, agree; 4, very agree) and were further dichotomized into two categories: whether the respondent agreed or disagreed with the myth statement. The higher the score, the more myths were believed to be facts.

Descriptive analysis was conducted, and summary measures were calculated as means and standard deviations or frequencies and percentages. The dependent variable was the number of agreed myths that the respondent believed to be true. Data analyses were performed using SPSS version 25 software. The Mann–Whitney U test, Kruskal–Wallis test, and Spearman correlation were used to compare and correlate myth beliefs and related variables. Significance was set at 5%.

### Results

Of the 895 total respondents, 801 were included in the analysis based on the inclusion criteria set in this study. The completion of the survey was unsupervised and nonobligatory. The

survey period was limited to 10 days. The average age of the respondents was  $31.7 \pm 4.7$  years, and the average total number of children per respondent was  $1.8 \pm 1.1$ . The respondents originated from 30 of the 34 Indonesian provinces.

| Variables   | N (%)       |
|---|-------------|
| Status  |             |
| Pregnant  | 159 (19.8%) |
| Breastfeeding   | 378 (47.2%) |
| Preschool-aged child  | 264 (33%)   |
| Working status  |             |
| Housewife   | 418 (52.2%) |
| Works in an office  | 383 (47.8%) |
| Domicile island   |             |
| Java  | 371 (46.3%) |
| Sumatera & Kalimantan   | 370 (46.2%) |
| Sulawesi, Maluku, Bali, Nusa Tenggara & Papua                                   | 60 (7.5%)   |
| Living arrangement  |             |
| With nuclear family   | 506 (63.2%) |
| With extended family  | 295 (36.8%) |
| Mother's education  |             |
| Basic education   | 131 (16.3%) |
| Higher education  | 670 (83.4%) |
| Medical status  |             |
| Delivered a premature baby  | 60 (7.5%)   |
| Delivered a low birth weight baby   | 73 (9.1%)   |
| Had pregnancy problems  | 209 (26.1%) |
| Reported oral problems during pregnancy (N = 283)                               |             |
| Dental caries   | 212 (74.9%) |
| Toothache   | 182 (64.3%) |
| Bleeding gums   | 115 (40.6%) |
| Swollen gums  | 101 (35.7%) |
| Stomatitis  | 93 (32.9%)  |
| Halitosis   | 93 (32.9%)  |
| Dry mouth   | 81 (28.6%)  |
| Reported oral problems in the last 6 months (N = 389)                           |             |
| Dental caries   | 275 (70.7%) |
| Toothache   | 198 (50.9%) |
| Stomatitis  | 169 (43.4%) |
| Halitosis   | 128 (32.9%) |
| Swollen gums  | 124 (31.9%) |
| Bleeding gums   | 123 (31.6%) |
| Dry Mouth   | 105 (27%)   |
| Preschool child with oral problems (N = 266)                                    |             |
| Dental caries   | 183 (68.8%) |
| Stomatitis  | 161 (60.5%) |
| Traumatic dental injuries   | 107 (40.2%) |
| Halitosis   | 103 (38.7%) |
| Swollen gums  | 60 (22.6%)  |
| Bleeding gums   | 36 (13.5%)  |
| What mother does when their preschool child/toddler has oral problems (N = 266) |             |
| Goes to the dentist   | 170 (64%)   |
| Self-treatment  | 156 (58.6%) |
| Untreated   | 56 (21.1%)  |
| Uses traditional medicine   | 55 (20.7%)  |
| Dental visit  |             |
| Visited a dentist before pregnancy  | 542 (67.7%) |
| Visited a dentist during pregnancy  | 288 (36%)   |

**Table 1.** Descriptive analysis of the respondents (N = 801).

| Myths  | Prevalence |
|--|------------|
| Pregnant women's teeth easily rot due to calcium absorption by the fetus.                                    | 70.2%      |
| Calcium supplement consumption during pregnancy will stimulate the eruption of primary teeth.                | 68.3%      |
| Receiving an anesthetic injection for dental treatment during pregnancy will affect the organs of the fetus. | 49.7%      |
| Aching caries are caused by a tooth worm.  | 36.7%      |
| Pregnant women should avoid cold/hot food and beverages during pregnancy.                                    | 35.7%      |
| Tooth extraction during pregnancy will cause miscarriage.  | 28.7%      |
| Bleeding gums during pregnancy is a common thing and does not need any specific treatment.                   | 28.6%      |
| Tooth extraction could cause myopia.   | 18.9%      |
| Drinking breast milk at night could cause caries in the primary teeth.                                       | 11.1%      |
| A pregnant woman should not visit a dentist during her pregnancy regardless of having any oral problems      | 6.4%       |
| Breast milk could cause caries.  | 7.4%       |
| A woman should delay brushing her teeth for a few days or weeks after labor.                                 | 2.7%       |

**Table 2.** Myth statements related to pregnant and breastfeeding women and the prevalence of belief among the respondents

Most of the respondents were women who were currently breastfeeding. Table 1 presents the descriptive analysis of the respondents based on the sociodemographic and oral health variables. Table 2 lists the oral health myths identified in this study and the proportion of the respondents who reported that they believed each myth. Table 3 shows the myth belief prevalence associated with selected variables. A statistically significant difference in myth beliefs was found between working status, mother's education, and dental visit.

| Variables                          | Myth      | p-value |
|------------------------------------|-----------|---------|
| Working status                     |           | 0.001*  |
| Housewife                          | 3.9 (1.9) |         |
| Works in an office                 | 3.4 (1.9) |         |
| Living arrangement                 |           | 0.833   |
| With extended family               | 3.7 (1.9) |         |
| With nuclear family                | 3.6 (1.9) |         |
| Mother's education                 |           | 0.001*  |
| Basic education                    | 4.6 (2.2) |         |
| Higher education                   | 3.5 (1.8) |         |
| Visited a dentist before pregnancy |           | 0.001*  |
| No                                 | 4.2 (2.1) |         |
| Yes                                | 3.4 (1.8) |         |
| Visited a dentist during pregnancy |           | 0.026*  |
| No                                 | 3.8 (2.0) |         |
| Yes                                | 3.4 (1.7) |         |

\*p-value < 0.05, Mann-Whitney U test

**Table 3.** Comparison of myth belief prevalence associated with selected variables (N = 801).

## Discussion

Myths can be interpreted as stories that are continuously disclosed by a group of people and that have become part of the cultural identity of the society.<sup>8</sup> Despite increases in the spread and level of education around the world leading to the dispelling of myths and beliefs, they still occur and are commonly found in society.<sup>8</sup> Educational background is a main factor in determining the level of a mother's trust in oral health-related myths, and it was found in this study that mothers with a lower education level tend to have a stronger belief in myths than mothers with higher education backgrounds.

Belief in myths is a strong influencing factor when people are seeking treatment for a disease.<sup>8</sup> In the dentistry field, a patient's belief in myths that have no factual basis can lead to them not following prescribed treatment protocols, which can result in the dentist facing considerable challenges in providing effective treatment.<sup>9</sup> The concept of evidence-based

dentistry (EBD) is typically practiced by dental health care workers to seek relevant clinical information. In the EBD hierarchy, systematic reviews and meta-analyses are considered the most reliable and credible sources of information, while myths—with their lack of proof and facts—are placed at the bottom of the EBD hierarchy.<sup>10</sup>

During pregnancy, a woman is likely to be eager about taking care of her own health and her baby's health.<sup>11</sup> In alignment with the findings of other studies, our findings showed that the pregnant women and mothers who regularly visited the dentist before, during, and after pregnancy do not believe the myths related to oral health, whereas those who did not visit the dentist before, during, and after pregnancy tended to believe the myths. Women experience physical changes during pregnancy, including in their oral health. For example, estrogen increase is related to a high prevalence of gingivitis and gingival hyperplasia. Pregnant women may also encounter a range of other oral health issues, such as dental caries, periodontal disease, gingivitis, tooth mobility, and tooth erosion, that require specific treatment by a dentist.<sup>6</sup> Furthermore, pathophysiological conditions due to the unbalanced composition of the oral microbiome of pregnant women could be detrimental to pregnancy outcomes, resulting in premature birth, a low birth weight baby, pre-eclampsia, and other complications.<sup>12</sup>

The traditionally taught etiology of caries is the triad of bacteria, sugar, and tooth surface, which is influenced by cultural, social, and environmental factors that affect oral health treatment, sugar consumption, and dental treatment access behaviours.<sup>13</sup> Frequency of sweet food and beverage consumption, drinking bottled milk prior to sleeping at night, irregular tooth brushing, and limited access to oral health care may significantly increase the risk of caries in children.<sup>14-16</sup> In contrast, breastfeeding up to the age of one year is not related to the increase of caries risk; in fact, breast milk provides higher immunity compared to formula.<sup>9</sup> Nonetheless, belief in myths influences oral health treatment, and therefore it is important to acknowledge that myths about oral health exist, as do beliefs in the myths.<sup>17</sup> Myths have a powerful influence on the process of treatment-seeking during illness.<sup>18,19</sup> Therefore, the role of the mother has been demonstrated to be very important in ensuring optimum oral health habits in her children.

## Conclusions

From the results of this study, it can be concluded that oral health-related myths and myth beliefs still exist in Indonesia. A high prevalence of belief in oral health-related myths may hinder optimal maternal and child oral health. Hence, educating the community, especially women, about oral health-related myths and facts is recommended.

## Acknowledgements

This study was supported by Universitas Indonesia.

## Declaration of Interest

The authors report no conflicts of interest.

## References

1. Jain L, Juneja R, Kansal R, Kumar V. Prevalence of myths regarding oral health among pregnant women in North India. *Int J Dent Hyg*. 2021;19(1):127–134.
2. Khan SA, Dawani N, Bilal S. Perceptions and myths regarding oral health care amongst strata of low socio economic community in Karachi, Pakistan. *J Pak Med Assoc*. 2012;62(11):1198–1203.
3. Gambhir R, Nirola A, Anand S, Gupta T. Myths regarding oral health among patients visiting a dental school in North India: A cross-sectional survey. *Int J Oral Heal Sci*. 2015;5(1):9.
4. Chen J, Duangthip D, Gao SS, Huang F, Anthonappa R, Oliveira BH, et al. Oral Health Policies to Tackle the Burden of Early Childhood Caries: A Review of 14 Countries/Regions. *Front Oral Heal*. 2021;2(June).
5. Xiao J, Alkhers N, Kopycka-kedzierawski DT, Billings RJ, Wu TT, Castillo DA, et al. Prenatal Oral Health Care and Early Childhood Caries Prevention: A Systematic Review and Meta-analysis. *Caries Res*. 2019;53(4):411–421.
6. Naseem M, Khurshid Z, Khan HA, Niazi F, Zohaib S, Zafar MS. Oral health challenges in pregnant women: Recommendations for dental care professionals. *Saudi J Dent Res*. 2016;7(2):138–146.
7. Cidro J, Zahayko L, Lawrence HP, Folster S, McGregor M, McKay K. Breast feeding practices as cultural interventions for early childhood caries in Cree communities. *BMC Oral Health* [Internet]. 2015;15(1):1–10.
8. Pandya P, Bhambal A, Bhambani G, Bansal V, Kothari S. Dental Care: Social Myths and Taboos. *People's J Sci Res*. 2016;9(2):42.
9. Vignesh R, Priyadarshni I. Assessment of the prevalence of myths regarding oral health among general population in Maduravoyal, Chennai. *J Educ Ethics Dent*. 2012;2(2):85.
10. Dhar V. Evidence - based dentistry: An overview. *Contemp Clin Dent*. 2016;7:293–294.
11. Jain D, Agrawal N, Gautam A, Jain S. Dental Health Care in Pregnancy: A Survey And Literature Review. *IOSR J Dent Med Sci*. 2016;15(6):91–95.
12. Saadaoui M, Singh P, Al Khodor S. Oral microbiome and pregnancy: A bidirectional relationship. *J Reprod Immunol*. 2021;145:103293.
13. Kim Seow W. Environmental, maternal, and child factors which contribute to early childhood caries: A unifying conceptual model. *Int J Paediatr Dent*. 2012;22(3):157–168.
14. Branger B, Camelot F, Droz D, Houbiers B, Marchalot A, Bruel H, et al. Breastfeeding and early childhood caries. Review of the literature, recommendations, and prevention. *Arch Pediatr*. 2019;26(8):497–503.
15. Nirunsittirat A, Pitiphat W, McKinney CM, Derouen TA, Chansamak N, Angwaravong O, et al. Breastfeeding Duration and Childhood Caries: A Cohort Study. *Caries Res*. 2016;50(5):498–507.
16. Setiawati F, Sutadi H, Rahardjo A, Bachtiar A, Maharani DA. The relationship between oral health habits in children and early childhood caries in Jakarta, Indonesia. *J Int Dent Med Res*. 2017;10:540–545.
17. Saravanan R, Thiruneervannan R. Assessment of dental myths among dental patients in Salem City. *J Indian Association Public Heal Dent*. 2011;18:359–363.
18. Nagaraj A, Ganta S, Yousuf A, Pareek S. Enculturation, myths and misconceptions regarding oral health care practices among rural female folk of Rajasthan. *Stud Ethno-Medicine*. 2014;8(2):157–164.
19. Gupta Dr. Vinay Kumar, Tripathi S, Kankane DN, Mishra DG, Kumar DS, Malhotra DS. Myths Related to Dentistry in People of Lucknow: A Cross sectional Study. *Saudi J Oral Dent Res*. 2021;6(3):123–128.