

Perception of mothers in Owerri, South-East Nigeria about teething in infants

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Abstract

Background: Teething is a natural and physiological process in growing infants. It is one of the major milestones in the development of the child and has been attributed to cause a myriad of problems to the infant.

Aim: This study sought to determine the knowledge, beliefs and practices of mothers from Owerri, South-East Nigeria on childhood teething.

Methods: This was a cross-sectional, descriptive study that involved 127 mothers who attended the infant immunisation clinic of Federal Medical Centre Owerri over 3 months from September to November 2018.

Results: Fifty-one (41.7%) infants had the eruption of the first tooth on or before 5 months of age. A good proportion 111 (87.4%) of mothers believed that tooth eruption in infants will come with illness, while 55 (43.3%) of the mothers had in the past experienced symptoms with teething in their babies. Seventy-three (57.5%) of the mothers use medications as prophylaxis for teething-associated problems. Mother's education did not significantly influence the use of teething prophylaxis (31.4% of mothers with tertiary education administered medications to their children during teething compared to 54.2% of mothers with lower educational background, $P = 0.094$, $\chi^2 = 6.392$).

Conclusion: Mothers in Owerri, South Eastern Nigeria irrespective of their educational status still have wrong perceptions and beliefs about teething and majority routinely administer medications for presumed teething problems.

Keywords: Infant, mother, perception, teething

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INTRODUCTION

Teething is the process by which a baby's teeth erupt, or break through, the gums. The process usually begins at about 5–7 months of age with the lower central incisors.¹ It is one of the major milestones in the child's development and in Nigeria, many parents celebrate it by taking photographs of the child. In addition, the precocious

eruption of teeth is seen as a sign of great intelligence in some cultures.² However, teething is thought to be associated with a myriad of problems to the infant.

The period of teething coincides with the time when there is waning of transplacentally transferred humoral immunity and the establishment of the child's own humoral immunity. This makes the infants relatively more susceptible to a wide

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range of infections at this time.³ In addition, a lot of babies insert their fingers into their mouth in a bid to reduce some discomfort associated with teething and could introduce infectious agents into their mouth in the process.

There have been conflicting reports in medical literature concerning teething and its association with childhood illness. For instance, Hippocrates believed teething was associated with itching gum, diarrhoea and fever, while Wake *et al.*⁴ refuted these associations. These conflicting reports may explain why a lot of parents and even some health-care practitioners (some of whom are parents themselves) still attribute certain childhood illness such as vomiting, fever and diarrhoea to teething. This belief may lead to delay in seeking prompt medical intervention. On the other hand, they may also be aggressive with seeking care and administer unnecessary medications putting the child at risk of harm and thus may subsequently increase morbidity and mortality. This study sought to determine the knowledge, beliefs and practices of mothers from Owerri, South-East Nigeria on teething. The findings of this study could help form the basis for health promotional messages aimed at addressing the misconceptions regarding teething in the region and the continent at large.

METHODS

Description of the study area

The study was carried out over 3 months from September to November 2018 at the infant immunisation clinic of Federal Medical Centre Owerri Imo State Nigeria. The infant immunisation clinic is where routine childhood immunisation is carried out daily. Certain immunisations are given on specific days of the week. Children aged 0–59 months attend the clinic.

Study design

This was a cross-sectional, descriptive study using structured self-designed pre-tested questionnaire. Mothers whose babies were due for the second dose of measles vaccination and gave consent for inclusion in the study were given the questionnaire to fill. Convenience sampling technique was used and study participants were consecutively recruited.⁵

Ethical consideration

Ethical approval was obtained from the Research and Ethics Committee of the Federal Medical Centre Owerri before the commencement of the study.

Statistical analysis

The data obtained were analysed using the Statistical Package for the social Sciences version 20.0 (SPSS, Chicago, Ill, USA). Frequencies of qualitative variables

were summarised using tables and percentages were calculated. Chi-square test was used to test for the statistical significance of differences in the proportions of categorical variables. The acceptable level of statistical significance was set at $P < 0.05$ and 95% of confidence interval were reported.

RESULTS

A total of 140 questionnaires were distributed, but only 127 mothers completed and returned the questionnaire giving a response rate of 90.7%. The majority were married, and only three (2.4%) were single mothers. The majority of the responders 45 (35.4%) had 2 children followed by mothers with 3 children 27 (21.3%). They were mainly Igbos (91.4%) and Christians (97.6%). Their ages, highest level of education and occupations and number of children are documented in Table 1. Majority (>80%) of the mothers had tertiary education. About a quarter were unemployed while those with three children or less predominated.

The beliefs of the mothers about the age of commencement of tooth eruption in infants are shown in Table 2. The

Table 1: Characteristics of the mothers

Variable	Frequency (%), n=127 (100%)
Age (years)	
20-29	49 (38.6)
30-39	73 (57.5)
>40	5 (3.9)
Educational status	
Primary/no education	3 (2.4)
Secondary	22 (17.3)
Tertiary	102 (80.3)
Employment status	
Unemployed	30 (23.6)
Artisan	9 (7.1)
Trading	32 (25.2)
Civil servants	42 (33.1)
Public servants	14 (11.0)
Number of children	
One	21 (16.5)
Two	45 (35.4)
Three	27 (21.3)
Four	22 (17.3)
Five	12 (9.5)

Table 2: Mother's perception of age of commencement of tooth eruption versus their experience with their infants

Age of tooth eruption (months)	Belief frequency (%)	Experience frequency (%)
≤5	49 (38.6)	53 (41.7)
6	45 (35.4)	27 (21.3)
7	12 (9.4)	11 (8.7)
8	7 (5.5)	21 (16.5)
9-12	14 (11.0)	11 (8.7)
>12	0	4 (3.1)
Total	127 (100)	127 (100)

highest proportion of mothers believe that tooth eruption should commence at 5 and 6 months (38.6% and 35.4%, respectively), whereas, regarding their experience in their infants, about 53 mothers (41.7%) experienced the first tooth eruption on or before 5 months of age, as shown in Table 2.

A high proportion (87.4%) of mothers believed that tooth eruption in infants will come with illness. Only 12 (9.4%) of the mothers responded in the negative, while 4 (3.1%) were unsure. Symptoms recognised by mothers as evidence of teething in babies included: fever 96 (75.6%), diarrhoea 79 (62.2%) and drooling of saliva, as shown in Table 3. Only 55 (43.3%) of the mothers had in the past experienced symptoms with teething in their babies and the symptoms they associated to teething included fever, poor feeding, irritability, vomiting and cough, as shown in Table 3.

More than half of the mothers (57.5%) believed that chemoprophylaxis is necessary to prevent associated problems with teething. These problems include; poor growth (16.5%) or weight loss (22.8%), serious illness (37.8%) or even death (4.7%). The belief that teething causes illness was not influenced by level of education attained ($P = 0.46$, $\chi^2 = 0.554$) nor by having more than 2 children ($\chi^2 = 1.64$, $P = 0.20$).

Seventy-three (57.5%) of the mothers use medications as treatment for presumed teething-associated problems. The medications used included: Paracetamol and teething powder, as shown in Table 4. Twenty-five mothers (19.7%) took their children to hospital when they believed they were experiencing teething symptoms.

Table 3: Mother's belief of symptoms associated with teething

Symptoms	Belief frequency (n= 127) (%)
Fever	96 (75.6)
Diarrhoea	79 (62.2)
Drooling of saliva	75 (59.1)
Irritability	59 (46.5)
Poor appetite	46 (36.2)
Vomiting	28 (22.0)
Cough	13 (10.2)
Abdominal discomfort	13 (10.2)
Others	12 (9.4)

Table 4: Medications used as treatment for presumed teething problems

Medication	Frequency (n= 127) (%)
Paracetamol	102 (80.3)
Teething powder	47 (37.0)
Herbal mixtures	7 (5.5)
Salt water	11 (8.7)
Others*	18 (14.2)

*Antibiotics, anti-motility drugs

Mother's education did not significantly influence the use of teething prophylaxis (31.4% of mothers with tertiary education administered medications to their children during teething compared to 54.2% of mothers with lower educational background, $P = 0.094$, $\chi^2 = 6.392$). Mothers with more than 2 children were more likely to give teething prophylaxis compared to those with 2 children or less ($P = 0.04$, $\chi^2 = 4.43$).

The sources of information for the mothers on teething remedies were obtained from grandmothers (36.2%), medical personnel (34.4%), patent medicine dealers (10.2%) and from observing other mothers (29.1%).

DISCUSSION

This study explores the beliefs and practices of mothers in Owerri, an urban community in Southeast Nigeria about primary tooth eruption in infants. For mothers interviewed in this study, the average age for commencement of eruption of their present child's tooth was 6.27 ± 1.52 months, while the majority of the mothers perceived that the ideal time for tooth eruption was 6.03 ± 1.45 . This is within the age range of 5–7 months documented by Needman,¹ but differs from the ages obtained by 2 different Nigerian studies which found average ages of 7.72 ± 2.19 and 8.09 ± 2.73 months, respectively.^{6,7} In Turkish children, it was 7.4 ± 2.0 months,⁸ in Australian and Saudi children, the earliest age of eruption was 8.6 ± 2.0 and 8.47 ± 2.81 months respectively,^{9,10} while in Indian children, it was found to be even later (10.72 ± 0.56 months).¹¹ The reason for the disparity is not obvious.

This study shows majority of the women believed that teething was associated with several symptoms. These included fever, diarrhoea, drooling of saliva, irritability, loss of appetite, cough, vomiting and abdominal pain. Similar beliefs were reported by Ige and Olubukola¹² in Ibadan Nigeria, Wake *et al.*¹³ in Australia, Sarrell *et al.*¹⁴ in Israel and Baykan *et al.*⁸ in Turkey. In all these studies, the recurrent symptoms include fever, irritability, increased chewing and biting, drooling, loss of appetite, sleep disturbances, diarrhoea, vomiting, runny nose and pulling of the ears.^{8,12-14} Furthermore, reports^{3,14-16} have also shown that some these beliefs have been upheld by medical personnel, including medical doctors who should be more knowledgeable in order to educate these mothers. These beliefs cut across education and experience as mothers, both the highly educated as well as multiparous mothers share similar opinions with the not very educated and mothers with very few children.

Interestingly, some of these symptoms have been found by some researchers to actually occur along with teething.^{17,18} Macknin *et al.*¹⁷ and Jaber *et al.*¹⁸ in separate studies found that teething was significantly associated with low grade fever, but the study by Wake *et al.*⁴ did not find any relationship between fever and teething. Similarly, other symptoms such as decreased appetite for solid foods, biting, drooling, ear rubbing, gum rubbing, irritability, rash on the face, sucking and wakefulness were found by Macknin *et al.*,¹⁷ to be associated with teething unlike Wake *et al.*,⁴ who found no association with any of these. These contradictory findings add to the controversy on teething symptoms, myths or facts, and make it even more difficult for the health-care worker to correctly advice the mothers.

The desire by mothers and caregivers to treat and prevent symptoms and consequences of teething has resulted in the quest for all sorts of medications including unorthodox ones such as herbal mixtures and salt water. The manufacturing companies are also responding by producing mixtures of paracetamol, antihistamines and other components in a bid to satisfy the desires of these mothers. Smitherman *et al.*¹⁹ in a survey of black American community documented a wide use of folk remedies that includes benzocaine gel, whiskey, penny, ice cubes and spices, which cuts across educational status. It is sad to note that some of these medications such as the herbal mixtures can be harmful to these babies and should therefore be discouraged. Another harmful aspect is the fact that mothers whose babies are ill during teething may delay in seeking care at the health-care centres attributing such illnesses to teething. In the study by Ige and Olubukola¹² over 50% of the mothers would not seek medical care promptly with the symptoms as they believed they will resolve on their own. This practice may result in dire consequences including the death of these babies in some cases. Consequently, there is need to educate the mothers, as well as, health-care providers on the facts and myths about teething in infants to avert such bad outcomes.

Limitation of the study

This study was carried out in an urban setting; the findings may not be applicable in rural settings. Another limitation is the small number of subjects used for this study will limit the applicability of these findings to the larger population.

CONCLUSION

Mothers in Owerri, South Eastern Nigeria irrespective of their educational status still have inappropriate perceptions and beliefs about teething and the majority routinely administer medications for teething. This may have dire consequences for the child, family and the community.

Therefore, it is necessary that health workers, mothers and all stakeholders should be properly educated on the facts and myths about teething in infants to improve the health of these children.

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Conflicts of interest

There are no conflicts of interest.

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QUESTIONNAIRE

Biodata

1. Age (a) <20 (b) 20–24 (c) 25–29 (d) 30–34 (e) 35–39 (F) above 40
2. Level of education (a) primary (b) secondary (c) tertiary
3. Occupation_____
4. Marital status (a) married (b) single (c) others specify_____
5. Religion (a) Christianity (b) Islam (c) others specify_____
6. Tribe (a) Igbo (b) Yoruba (c) Hausa (d) others specify_____
7. Number of children (a) 1 (B) 2 (c) 3 (d) 4 (e) 5 (f) 6 and above_____
8. Husbands level of education (a) primary (b) secondary (c) tertiary
9. Husbands occupation_____
10. Gender of the index child (a) male (b) female
11. Age of the index child_____

A. Please answer these questions as accurately as you can.

1. Do you think tooth eruption causes illness in children?

Yes	No	Not always	Don't Know
_____	_____	_____	_____

2. At what age do you expect a baby's teeth to start erupting?

Below 3 months	4 months	5 months	6 months	7 months	8 months	B4 1 year
_____	_____	_____	_____	_____	_____	_____

3. At what age did your present child erupt 1st tooth?

Can't remember	4-5 months	6 months	7 months	8 months	9-12 months	Above 1 year
_____	_____	_____	_____	_____	_____	_____

4. Do you worry about the time your baby's teeth start to erupt?

Yes	No	Not bothered
_____	_____	_____

5. What problems do you think are associated with teething in children?

Fever	Loose stool	Vomiting	Drizzling of saliva	Poor appetite	Cough	Excessive crying	Abdominal pain	Others mention
_____	_____	_____	_____	_____	_____	_____	_____	_____

6. Do you apply any medications to your child when you expect him/her to start teething?

Yes	No	Sometimes	If need be
_____	_____	_____	_____

7. What do you usually give your child when he starts teething?

Paracetamol keys	7 Teething powder	'GBOMORO' Herbs	Salt water	Any other I PLs list
_____	_____	_____	_____	_____

8. Was tooth eruption in your baby associated with any illness?

Yes	No
_____	_____

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9. If yes, list the symptoms your baby had? _____

10. Did you take your child to hospital when he/she was having teething symptoms?

Yes _____ **No** _____

11. Who gave you the information on how to handle teething in babies?

Mother **Grand** **Friends** **From** **Nurse** **Doctor** **Chemist**
 mother **observation**

12. What do you think will happen if you do not give the baby anything for teething?

Poor **Severe** **Nothing** **Death** **Weight** **Any**
growth **illness** **loss** **other**

13. Have you ever seen any child die from teething problems?

Yes **No** **Heard stories** **Only warned**

14. Does teething have any effects on the older children?

Yes **No** **Don't know**

15. Should a baby be taken to hospital if teething? (a) yes (b) no

16. If yes mention the reasons _____