Experience of Mothers about their Infants’ Teething in Mosul City.

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ABSTRACT
Aims: To evaluate mothers experience about their infants’ teething, which symptoms they have seen and attributed to teething and how they have acted to manage these symptoms.

Material and Methods: In this study, a total of 200 mothers of children less than 18 months of age, who had at least one tooth and who came to the primary health care centers for vaccination of their children were asked to participate in this study. The first part of the questionnaires was to clarify the eruption time of the first primary tooth and in the other part the mothers were also asked about the symptoms they attributed to teething and the methods they used to relieve the symptoms.

Results: The mean eruption time of the first tooth of the infants was 6.9 ± 2 months, with a range of 4 – 18 months. All of the mothers reported that their children had suffered from at least one of the symptoms that were mentioned in the questionnaire. The prevalence of teething symptoms distributed according to the age groups demonstrated that fever, irritability, sleep disturbance and lose of appetite were significantly highest in (below 6) months age group, while diarrhea, dribbling, runny nose, vomiting, cough, diaper rash and smelly urine were significantly highest in (6 – 12) months age group.

Conclusion: It is commonly thought that teething in infants can cause a variety of signs and symptoms. In this study all the mothers believed that teething is associated with the appearance of symptoms, some of which are minor and related to discomfort, while others are physical illness.

Key words: Infants, teething.

Introduction
The eruption of primary teeth in infancy is commonly referred as “Teething”. The eruption of deciduous teeth usually begins by 4 – 10 month after birth. Further, tooth eruption continues at a rate of approximately one tooth for each month, and the 20 deciduous teeth are almost always completed by about 30 months of age (1).

Tooth eruption is the process by which a tooth moves from its site of development within the jaws to its final functional position in the oral cavity (2). Although the tooth itself seems to play no active role in the process, the dental follicle, which is a rich source of growth factors, seems to be crucial (3).

The belief, that teething led to childhood mortality, seizures diarrhea, fever or other serious condition was criticized as early as the 17th Century (4). Yet in 1839, 5016 deaths in England and Wales were attributed to teething (5). However; as recently as 1979, parents and physicians were identifying teething as a cause of presenting symptoms in children admitted to the hospital, a study of 50 of these children showed that in 48 cases, medical evaluation found other causes for the symptoms ranging from upper respiratory infection to bacterial meningitis (6).

The aims of this study were to evaluate mothers experience about their infants’ teething, which symptoms they have seen and attributed to teething and how they have acted to manage these symptoms.

Materials and Methods
Two hundred mothers of children less than 18 months of age, who had at
least one tooth and had come to the pri-
mary health care centers for vaccination of
their children were asked to partici-
pate in this study. None of the mothers ref-
used to answer the questionnaire form
which was applied by face–to–face inter-
view technique. The first part of the ques-
tions was to clarify the eruption time of the
first primary tooth and in the other part the
mothers were also asked about the symp-
toms they attributed to teething and the
methods they used to relief the symptoms.
The symptoms asked about them in this stu-
dy were included in most previous studies
(7–9).

Data were analyzed using numbers of
infants and percentages. Z–test between
two proportions was used for determining
the gender differences for each symptom.
Kruskal Wallis Test was used for determ-
in ing the differences between age groups
for each symptom. The differences were
considered significant at $p \leq 0.05$.

**RESULTS**

A total of 200 mothers with children
at an age range of (4 – 18) months with at
least one tooth present participated in the
study, the children's distribution according
to their age was as follow: 65 (32.5%) inf-
ants were under 6 months of age, 72
(36.0%) were between 6 and 12 months
and 63 (31.5%) were between 13 and 18
months. There were 93 (46.5%) males and
107 (53.5%) females, Table (1).

The mean eruption time of the first
tooth of the infants was $6.9 \pm 2$ months,
with a range of 4 – 18 months. The age
groups according to the first tooth eruption
include (4–6, 7–9, 10–12, 13–15 and 16–
18) months The distribution of the teeth
eruption time was shown in Figure (1),
and the number of infants in each group
are 73, 92, 11, 20 and 4 respectively.

All of the mothers reported that their
children had suffered from at least one of
the symptoms that were mentioned in the
questionnaire. The prevalence of teething
symptoms reported by mothers is shown in
Table (2). The most commonly reported
symptom that all of the mothers reported
that their children had suffered was incre-
ase in biting, followed by fever (181, 90.5
%) and irritability (180, 90.0%). The preva-
lence order of the other symptoms was
sleep disturbance (173, 86.6%), lose of
apetite (146, 73.0%), diarrhea (99, 49.5%),
dribbling (98, 49.0%), runny nose (65,
32.5%), vomiting (57, 28.5%), cough (50,
25.0%), diaper rash (46, 23.0%), red cheek
(45, 22.5%) and smelly urine (33, 16.5%).
While no mother reported that her child
had suffered from constipation or other
symptoms that were not included in this
study. No statistically significant differen-
test was determined between the genders
concerning the prevalence of teething sy-

toms ($p>0.05$).

The prevalence of teething symptoms
distributed according to the age groups is
shown in Table (3), which demonstrated
that fever, irritability, sleep disturbance
and lose of appetite were significantly hig-
hest in (below 6) months age group, while
diarrhea, dribbling, runny nose, vomiting,
cough, diaper rash and smelly urine were
significantly highest in (6 – 12) months age

group.

Although all of the mothers reported
that their children had suffered from diff-
ent symptoms, only (45.5%) of them
have consulted a health care centre for
these symptoms. Overall (68.5%) of moth-
ers reported some kind of methods to
manage teething problems. Paracetamol
(56.2%), objects to chew on (38.69%),
anesthetic gels (35.77%), natural herbal
medicines (6.57%) and sedating medicate-
s (2.92%) were the methods used as
shown in Table (4).

<table>
<thead>
<tr>
<th>Age groups (months)</th>
<th>Male</th>
<th></th>
<th></th>
<th>Female</th>
<th></th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Below 6</td>
<td>25</td>
<td>26.88</td>
<td>40</td>
<td>37.38</td>
<td>65</td>
<td>32.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 – 12</td>
<td>37</td>
<td>39.78</td>
<td>35</td>
<td>32.71</td>
<td>72</td>
<td>36.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 – 18</td>
<td>31</td>
<td>33.33</td>
<td>32</td>
<td>29.91</td>
<td>63</td>
<td>31.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
<td>46.50</td>
<td>107</td>
<td>53.50</td>
<td>200</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table (1): Number and percentage of infants distributed according to
gender and age groups.
Table (2): Symptoms suffered resulting from teething distributed by genders.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Male (Number = 93)</th>
<th>Female (Number = 107)</th>
<th>Total (Number = 200)</th>
<th>P - value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Increase in biting or chewing</td>
<td>93</td>
<td>100</td>
<td>107</td>
<td>100</td>
</tr>
<tr>
<td>Fever</td>
<td>88</td>
<td>94.62</td>
<td>93</td>
<td>86.92</td>
</tr>
<tr>
<td>Irritability</td>
<td>83</td>
<td>89.25</td>
<td>97</td>
<td>90.65</td>
</tr>
<tr>
<td>Sleep disturbance</td>
<td>76</td>
<td>81.72</td>
<td>97</td>
<td>90.65</td>
</tr>
<tr>
<td>Lose of appetite</td>
<td>65</td>
<td>69.89</td>
<td>81</td>
<td>75.70</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>49</td>
<td>52.69</td>
<td>50</td>
<td>46.73</td>
</tr>
<tr>
<td>Dribbling</td>
<td>46</td>
<td>49.46</td>
<td>52</td>
<td>48.60</td>
</tr>
<tr>
<td>Runny nose</td>
<td>32</td>
<td>34.41</td>
<td>33</td>
<td>30.84</td>
</tr>
<tr>
<td>Vomiting</td>
<td>30</td>
<td>32.26</td>
<td>27</td>
<td>25.23</td>
</tr>
<tr>
<td>Cough</td>
<td>24</td>
<td>25.81</td>
<td>26</td>
<td>24.30</td>
</tr>
<tr>
<td>Diaper rash</td>
<td>24</td>
<td>25.81</td>
<td>22</td>
<td>20.56</td>
</tr>
<tr>
<td>Red cheek</td>
<td>22</td>
<td>23.66</td>
<td>23</td>
<td>21.50</td>
</tr>
<tr>
<td>Smelly urine</td>
<td>19</td>
<td>20.43</td>
<td>14</td>
<td>13.08</td>
</tr>
<tr>
<td>Constipation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

No.: Number; %: Percentage.

Figure (1): The number of infants grouped according to the eruption time of the first primary teeth erupted.
Table (3): Symptoms suffered resulting from teething distributed according to the age groups.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Age Groups (Months)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>X²</th>
<th>P–value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Below 6 (No. = 65)</td>
<td>6 –12 (No. = 72)</td>
<td>13 – 18 (No. = 63)</td>
<td>Total (No. = 200)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Increase in biting or chewing</td>
<td>65</td>
<td>100</td>
<td>72</td>
<td>100</td>
<td>63</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>Fever</td>
<td>65</td>
<td>100</td>
<td>68</td>
<td>94.44</td>
<td>48</td>
<td>76.19</td>
<td>181</td>
</tr>
<tr>
<td>Irritability</td>
<td>63</td>
<td>96.92</td>
<td>66</td>
<td>91.67</td>
<td>51</td>
<td>80.95</td>
<td>180</td>
</tr>
<tr>
<td>Sleep disturbance</td>
<td>60</td>
<td>92.31</td>
<td>64</td>
<td>88.89</td>
<td>49</td>
<td>77.78</td>
<td>173</td>
</tr>
<tr>
<td>Lose of appetite</td>
<td>60</td>
<td>92.31</td>
<td>61</td>
<td>84.72</td>
<td>25</td>
<td>39.68</td>
<td>146</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>11</td>
<td>16.92</td>
<td>59</td>
<td>81.94</td>
<td>29</td>
<td>46.03</td>
<td>99</td>
</tr>
<tr>
<td>Dribbling</td>
<td>19</td>
<td>29.23</td>
<td>68</td>
<td>94.44</td>
<td>11</td>
<td>17.46</td>
<td>98</td>
</tr>
<tr>
<td>Runny nose</td>
<td>17</td>
<td>26.15</td>
<td>38</td>
<td>52.78</td>
<td>10</td>
<td>15.87</td>
<td>65</td>
</tr>
<tr>
<td>Vomiting</td>
<td>12</td>
<td>18.46</td>
<td>33</td>
<td>45.83</td>
<td>12</td>
<td>19.05</td>
<td>57</td>
</tr>
<tr>
<td>Cough</td>
<td>10</td>
<td>15.38</td>
<td>36</td>
<td>50.00</td>
<td>4</td>
<td>6.35</td>
<td>50</td>
</tr>
<tr>
<td>Diaper rash</td>
<td>13</td>
<td>20.00</td>
<td>25</td>
<td>34.72</td>
<td>8</td>
<td>12.70</td>
<td>46</td>
</tr>
<tr>
<td>Red cheek</td>
<td>10</td>
<td>15.38</td>
<td>19</td>
<td>26.39</td>
<td>16</td>
<td>25.40</td>
<td>45</td>
</tr>
<tr>
<td>Smelly urine</td>
<td>18</td>
<td>18.06</td>
<td>2</td>
<td>27.69</td>
<td>13</td>
<td>3.17</td>
<td>33</td>
</tr>
<tr>
<td>Constipation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

No.: Number; %: Percentage.

Table (4): Methods used for manage teething symptoms.

<table>
<thead>
<tr>
<th>Methods for manage teething problems</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers consult a health care centre</td>
<td>91</td>
<td>45.5</td>
</tr>
<tr>
<td>Mothers not consult a health care centre</td>
<td>109</td>
<td>54.5</td>
</tr>
<tr>
<td>No using of any management for teething problem</td>
<td>63</td>
<td>31.5</td>
</tr>
<tr>
<td>Using one or more of the below methods to manage teething problem:</td>
<td>137</td>
<td>68.5</td>
</tr>
<tr>
<td>Paracetamol</td>
<td>77</td>
<td>56.20</td>
</tr>
<tr>
<td>Object to chew</td>
<td>53</td>
<td>38.69</td>
</tr>
<tr>
<td>Anesthetic gels</td>
<td>49</td>
<td>35.77</td>
</tr>
<tr>
<td>Natural herbal medicines</td>
<td>9</td>
<td>6.57</td>
</tr>
<tr>
<td>Sedating medications</td>
<td>4</td>
<td>2.92</td>
</tr>
</tbody>
</table>
DISCUSSION

The time of eruption of deciduous teeth is highly variable between and within populations; genetic and environmental factors are thought to be important \(^{(10)}\). In this study the mean eruption time of the first tooth of the infants was 6.9 ± 2 months and it is within the normal eruption time documented in other studies \(^{(1, 8–10)}\).

The association between teething and some symptoms is an old debate. In this study all of the mothers reported that their children had suffered from different symptoms that are in agreement with other studies. Some of these studies \(^{(9–12)}\) reported that most of mothers think that infants suffer some illnesses during teeth eruption, while other studies \(^{(13–16)}\) demonstrated that not only the parents, but the medical professionals believe that there is an association between teething and some symptoms.

The most commonly reported symptom was an increase in biting ability which is in agreement with other studies \(^{(7, 9, 14, 17)}\). Hence, irritability, sleep disturbance and lose of appetite were significantly more frequent among smallest age group which in agreement with other studies \(^{(4, 9)}\) that explained those finding directed toward the inability of these young infants to express themselves in other ways and these behaviors represent normal developmental stages, of a relatively trouble – free first 6 months of life, rather than pathology. Another finding was high prevalence of mothers that believe that fever is associated with teething which in agreement with jabber et al. \(^{(18)}\) who carried out a prospective study of 46 healthy infants and noted statistically significant but only a 0.6 °C rise in temperature on the day of tooth eruption. On the contrary, a cohort study \(^{(8)}\) performed on twenty one infants could not confirm a strong relation between tooth eruption and fever.

Another finding was that diarrhea, dribbling, runny nose, vomiting, cough, diaper rash and smelly urine were significantly highest in (6 – 12) months age group, which in agreement with other studies \(^{(9–11)}\) that have addressed possible relationship between teething and more general symptoms, while others concluded that the toddlers who have tendency to put objects in their mouth and the contaminated objects considered to be the causative factor for infection \(^{(19)}\). While other studies \(^{(20–22)}\) illustrated that severe infectious systemic upsets are unrelated to teething and, if present, the infant should be promptly referred to the physician for an accurate diagnosis and appropriate treatment. Since the eruption of teeth is a normal physiologic process, the association with fever and systemic disturbances is not justified, and should be considered coincidental to the eruption process rather than related to it.

All the mothers reported some symptoms during teething, most of them were managed without the help of a medical professional. The most common methods were over – the – counter pain – relief medications and teething objects, while others used topical and systemic pharmacological preparation and the natural herbal therapies which are safe and recommended in the medical literature and in agreement with those reported in other studies \(^{(9, 11, 21)}\).

CONCLUSIONS

It is commonly believed that teething in infant can cause a variety of signs and symptoms. In this study all the mothers believed that teething is associated with the appearance of symptoms, some of which are minor and related to discomfort, while others are physical illness and these still ascribes potentially serious symptoms to teething. So the danger of attributing all symptoms to teething without ruling out other possible causes must be emphasized.

REFERENCES