The role of the mother-child interaction as a factor in nursing caries (ECC): a preliminary communication

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ABSTRACT. Aim This was to investigate the role of the mother-child interaction as a factor in nursing caries. Methods A convenience sample of 34 parents whose children had been diagnosed with nursing caries (Early Childhood Caries, ECC) was gathered. A series of non-structured interviews with parents were conducted. The interviews were transcribed and analysed using Grounded Theory. Results The overarching category which explained the basic social process associated with nursing caries was ‘nursing caries mothering’. The three categories which emerged characterised the basic social process of ‘nursing caries mothering’ were regressive mothering, culpable mothering and convenience mothering. Conclusion ECC is characterised by regressive mothering, culpable mothering and convenience mothering. In each of these typologies the bottle once used to nourish the baby has become imbued with other behaviours and meanings. An awareness of these meanings of what the breast/bottle have come to represent should be incorporated and form a central strand of a joined-up health promotion approach.

KEYWORDS: Early Childhood Caries, Grounded theory, Parent-child interactions.

Introduction

Nursing caries, also known as Early Childhood Caries (ECC), is characterised by a unique pattern of dental decay [Davies, 1998]. There is extensive destruction of the primary maxillary incisors, generally beginning on the labial or palatal smooth surfaces, which affects the four maxillary incisors, while the four mandible incisors are affected last or may remain healthy [Ripa, 1988]. It is this observed pattern of decay which distinguishes ECC from rampant caries [Ripa, 1988].

It is known that ECC is caused by prolonged exposure to pooled fermentable liquids together with a lack of salivary flow during sleep. The severity of ECC, however, is associated with psychosocial and behavioural factors, such as the frequency, duration of and inappropriate use of breast feeding bottles and sugary drinks. Furthermore, children with ECC tend to come from lower socioeconomic groups with a pattern of irregular dental care, which is characterised by emergency attendance and dental general anaesthetic extractions [Bruerd and Jones, 1996; Al-Dashti et al., 1995]. Marino et al. [1989] have suggested that 7 ‘risk factors’ are responsible for the development of nursing caries:

1) bottle feeding beyond 15 months of age;
2) bottle feeding in bed;
3) lack of fluoride supplementation in the absence of water fluoridation;
4) inadequate professional guidance from pediatricians and health visitors;
5) single parenthood and/or low socioeconomic status;
6) children with sleep problems;
7) children with temper tantrums.

Dentists have recognised that ECC can be avoided and Marino et al. [1989] have proposed that it is by acknowledging these psychosocial and behavioural risk factors that the condition can be prevented. Mothers of toddlers have routinely been given appropriate dental health education as part of clinical dental practice. However, while the aetiology, pattern and prevalence of ECC are well researched and documented, the question remains as to why do some
mothers persist in the inappropriate use of prolonged bottle and breast feeding. This question may be in part answered by the findings of Marino et al. [1989] that the prolonged use of breast and feeding bottle may be in someway linked to the child’s behaviours and the mother-child interactions. The aim of the work presented here was to investigate the role of the mother-child interaction as a factor in ECC.

**Materials and methods**

**Sample.** On obtaining approval from the local research ethics committee a convenience sample of 34 parents whose children had been diagnosed with ECC [Ripa, 1988; De Grauwe et al., 2004] was gathered. Inclusion criteria comprised that the parents gave their informed and written consent. The sample was collected during:
- routine dental examinations in dental clinics;
- annual screening at nursery schools;
and/or
- referred from dental colleagues.

A series of non-structured interviews with parents were conducted until saturation of the categories occurred after 34 interviews.

**Procedure.** A qualitative methodological approach was used as we were not interested in clinical definitions of the causation of ECC but the parents’ perceptions of their children’s feeding habits. Hence, informal interviews were arranged with parents of child patients who had ECC. After describing confidentiality matters and obtaining consent, interviews were conducted at a convenient pre-arranged non-dental location (e.g. nursery school). The parents were encouraged to talk as much as possible about their child’s development from birth to present day and not to censor their thoughts and words. Although parents told their stories as they wished, key points were loosely woven into the interview to assist parents to describe fully their thoughts on their interactions with their children with regard to breast and bottle feeding. Parents were allowed to end the interview whenever they chose. The interviews lasted between 15-20 minutes. They were audio-taped and transcribed at a later date.

**Analysis of the data.** The qualitative research technique known as grounded theory [Glaser and Strauss, 1967] was used to analyse the data. Grounded theory is a rigorous technique for the collection and analysis of qualitative data. This approach is designed to discover rather than verify theory within data. The idea behind grounded theory is that the data speak for themselves. The researcher (AS) examined and re-examined the data looking for the behaviour (the basic social process or core category) that best explained the parents’ perceptions of their children’s feeding habits and their actions as the primary caretakers for their child. The interviews were coded starting by fracturing the data and isolating significant incidents such as events, issues, processes or relationships and labelling them using the parents’ words, e.g. “he never left my bed”, “she’d have the whole house up”. Each line of the interviews is summarised and a word (category) which best describes what is happening (incidence) is recorded. As the analysis continues more than one occurrence of an incidence is noted and coded. All new categories are compared with each other and any difference between them allows the generation of the theory. As the data analysis progresses no new categories or incidences emerge and the data is said to have reached saturation [Glaser and Strauss, 1967].

**Results**

The mothers’ ages ranged from 23 to 40 years with an average of 30.6 years. The number of children in the families ranged from 1 to 7 with the majority of the children affected by ECC being either the first (11) or second born (13). The children’s ages ranged from 3 to 4 years. The majority of the children were weaned (88%), however 4 children still used a feeding bottle (12%).

**ECC mothering: examining the categories**

The overarching category which explained the parents’ behaviour (the basic social process) associated with ECC was ‘nursing carries mothering’ as this conceptualised positive nurturing (nurturing and weaning) and negative nurturing (nurturing and babying). The three categories which emerged from the interview data appeared to reflect and characterise these nurturing behaviours which explained ‘nursing carries mothering’. These three categories were:
- Regressive mothering;
- Culpable mothering;
- Convenience mothering (Fig. 1).

These three concepts which emerged from the qualitative data assisted in understanding the conflict parents experienced when caring for their children. On the one hand mothers wished to enable their child’s development and independence (nurturing and weaning), but on the other hand they wanted to keep their children close and dependent on them (nurturing and babying).
Category 1: Regressive mothering

Regressive mothering is the category which describes a type of parental behaviour characterised by a ‘babying’ interaction with the child. Mothers (the word mother here is used to represent any carer responsible for the child) who behave in this way are unable to ‘let go’, to allow their children to develop, they want to keep the child as ‘a little baby’ and are overly sensitive to their child’s needs. The child’s apparent dependency on the breast or feeding bottle is a reflection of the mother’s ‘babying’ behaviour.

The following quote from a mother of a 3-year-old child is illustrative:

“The first thing she asked for when she came home from nursery school was the bottle. She needed it. The bottle was like a small comfort to her” [Mother 1].

Many mothers admitted to their wish and need to keep the child bound to them. They were unable to let the child be separated from them. Some mothers found it particularly difficult when their children became distressed and frightened at night. It seemed that the mothers’ behaviours reflected their own childhood fears of the night (regressive behaviours) as they brought or let their children sleep with them:

“She panics at night and won’t sleep. I can’t stand the crying so I get her into bed with me.” [Mother 14].

Category 2: Culpable mothering

As this second category emerged from the data it became evident that the mothers feared being blamed for their child’s ECC. Consequently a few mothers felt culpable, blaming themselves (intrinsic culpability) whilst the majority externalised the blame (extrinsic culpability) onto others or other things (e.g. medicines such as lactulose) in order to reduce their feelings of anxiety and guilt.

Intrinsic culpability. When parents accepted that they were to blame for the ECC their anxiety was raised simply by looking at their children’s teeth. This had implications for the parent’s ability to brush their children’s teeth with fluoride toothpaste as the sight of decayed teeth exacerbated their feelings of anxiety and guilt. This may be illustrated by one of the younger mother’s comments. She stated:

“I do feel awful when I look at his little teeth and I think that is mostly my fault - I can see where I went wrong.” [Mother 11]

Extrinsic culpability. These parents appeared angry, guilty and fearful they would be blamed for their children’s nursing caries. In an attempt to distance themselves from blame they put it (externalised) onto family, family members and the child’s ill health. Parents used a variety of blaming behaviours to externalise blame. These were:

Blaming the family. Some parents blamed the child. One parent accused her child of being ‘addicted to her bottle’. Another blamed her child’s drinking habits:

“She’s a very thirsty little girl and when I put her to bed she takes a drink of milk in the bottle with her. If she doesn’t get the bottle she screams the house down.” [Mother 2].

Blaming poor eating. As milk was perceived as a food, parents feared that removing the bottle would mean starving the child. Some mothers blamed genetics believing that ‘soft teeth’ ran in families and this was the reason for the children’s decayed teeth. Others openly blamed grandparents for providing fizzy drinks, sweets and chocolate:

“He has more sweets when he goes to his Granny’s. There’s a mobile shop and I know for a fact that his Granny takes him.” [Mother 9].

In one situation a young mother was experiencing a difficult break down of her relationship with the child’s father. The mother was very upset about the condition of her child’s teeth and felt the blame lay with the child’s father. The father saw the child each day for a couple of hours and the mother complained that:

“Jimmy (her child) always comes back with bagfuls of sweets and lemonade. His father thinks he is being really good buying Jimmy whatever he wants.”

Blaming illness. There was a tendency for other mothers to distance themselves from blame by believing that their children’s decay was due a medical problem or the use of medicine. One mother blamed the constipation of her 3-year-old child, who was currently taking the osmotic diuretic lactulose,
as the cause of the nursing caries. She angrily stated:
“I don’t care what you or anyone says, it was the lactulose that caused the bad teeth – nothing to do with the bottle!” [Mother 26]

This mother’s explanation of the cause of her child’s ECC was based on both scientific and commonsense belief. The osmotic diuretic lactulose contains lactose and although considered to be the least cariogenic sugar, if used inappropriately will result in ECC. However, this mother admitted that she had been advised to encourage her child to drink fluid so her child walked around all day with a feeding bottle containing fruit juice. Therefore, in some ways the mother was correct to blame the constipation despite the fact that ECC had been previously diagnosed when the child was aged 18 months. This clinical vignette illustrates the need to be sensitive to parent’s needs when providing information with regard to the use of medicines and the prevention of ECC.

**Category 3: Convenience mothering**

Convenience mothering is a behaviour characteristic of a chaotic lifestyle where children exist without routine – for example there are no set mealtimes or bedtimes (children eating when they are hungry and sleeping when tired). Convenience mothering is a type of mothering whereby the child is in control. The bottle or breast is therefore a convenience for the mother and child. For the mother the breast or bottle provides an instant solution to a child’s frustrations, temper tantrums and sleep problems [Marino et al., 1989]. For the mother life is made easier and she is afforded some peace when the child is soothed by the breast or bottle feed. The breast or bottle, as one mother put it, “Gives my head peace”. Many mothers suggested that the only way to get peace and sleep was to allow the child to breast or bottle feed (Table 1). Hence, children’s temper tantrums and sleeping problems were instantly stopped on the appearance of the breast or bottle. Consequently parents were able to have peace and undisturbed sleep by the convenient use of the breast or bottle.

**Discussion**

The diagnosis of ECC is made on the observed pattern of decay which is restricted to the labial and palatal surfaces of the maxillary incisors with little/absence of caries on the lower mandibular incisors [Ripa, 1988; De Grauwe et al., 2004]. However, although the aetiology of ECC with regard to the caries process is well documented, little has been written about how children from low socioeconomic groups [Hallett and O’Rourke, 2002; Gratrix and Holloway, 1994] present with ECC. Furthermore, although Marino et al. [1989] have suggested that behavioural and psychosocial factors are important in the severity of ECC the role of parents’ behaviour, and more specifically their interactions with their young children, appears to have been ignored. Hence the aim of the work represented was to find out how mothers’ behavioural interactions affect the development of ECC.

Grounded theory provides a useful framework for understanding the complex processes which are involved in the psychosocial causes of ECC. Parental behaviour and their interactions with their children invariably result in the children suffering from ECC. It is proposed that ECC could be explained as a process of ‘nursing caries mothering’ which was characterised

<table>
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<tr>
<th>Mother in study</th>
<th>Mother’s comments illustrating convenience mothering</th>
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<tbody>
<tr>
<td>Mother 31</td>
<td>If he didn’t get the bottle he’d be like a mad man squealing, jumping and throwing things</td>
</tr>
<tr>
<td>Mother 20</td>
<td>She took the bottle to make her go to sleep. I couldn’t stick the screaming and I needed sleep!</td>
</tr>
<tr>
<td>Mother 21</td>
<td>She’d have had the whole house up. I mean I would have hid the bottle but she would have wrecked the house till she found it. The only way to get her to sleep was to give her another bottle of juice</td>
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<tr>
<td>Mother 6</td>
<td>I would have brought two bottles up with me and when she woke up I would have brought one into her and if she woke up again I gave her the other one</td>
</tr>
<tr>
<td>Mother 29</td>
<td>He’d have woken up two or three times during the night and if he didn’t get his bottle he would squall and squeal. He would have cried all night until he got a drink</td>
</tr>
<tr>
<td>Mother 30</td>
<td>He lies on the ground and yells. He cries constantly and squeals until I give in and give him the bottle</td>
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**Table 1 - Examples of convenience mothering in relation to a study on Early Childhood Caries.**
by the conflict parents experienced, being illustrated by positive nurturing (nurturing-weaning) and/or negative nurturing (nurturing-babying) behaviours. Three categories of regressive mothering, culpable mothering and convenience mothering emerged which assisted in understanding the parental conflicts, difficulties and concerns associated with mothering. In each of the categories the bottle, once used to nourish the baby, has become imbued with other behaviours and meanings. Therefore, in regressive mothering the bottle is used to prolong the child’s babyhood. The breast/bottle takes on the role of babying and comforter with mother keeping her child as ‘baby’ and dependent on her for as long as possible. Culpable mothering, whether extrinsic or intrinsic, is dealing with blame. Convenience mothering is associated with a chaotic lifestyle in which the breast/bottle is perceived as an instant solution to the child’s frustrations, temper tantrums and sleep problems.

How can these observations of parental behaviours assist in the prevention of ECC? Reasons for ECC may be thought of as a dynamic interplay between the various categories of the condition and mothering which explains the conflict that results in the process (prolonged use of the bottle/breast) of ECC. Therefore, there is a requirement for the health professional to be sensitive to parent’s needs when providing information with regard to the prevention of ECC. This is particularly important when the parents feel culpable for their children’s oral health. The health professional must be in a position to understand the mother’s wishes to nurture her child to become independent but at the same time wanting to keep her child as ‘her baby’. Health professionals who have an awareness of the conflicts parents experience will be enabled to assist them in the prevention of nursing caries by improving parenting skills and the parent-child relationship.

It may be proposed that dental health professionals need the assistance, in this regard, from other health professionals. What is suggested is a multi-disciplinary approach to promote oral health and healthy lifestyles in children and parents from areas of high social deprivation. An awareness of the meanings of what the breast/bottle have come to represent for the parent in their interaction with the child should be incorporated and form a central strand of a joined-up health promotion approach. It is essential to negotiate and interact with the mother and health professionals on a multi-disciplinary basis to allow the provision of ‘joined-up’ health promotion for these children and parents residing in areas of greatest disadvantage.

**Conclusion**

Nursing caries/ECC mothering is characterised by regressive mothering, culpable mothering and convenience mothering. In each of these typologies the bottle once used to nourish the baby has become imbued with other behaviours and meanings. An awareness of these meanings of what the breast/bottle have come to represent should be incorporated and form a central strand of a joined-up health promotion approach.

**References**


