

## **Promotion of Breastfeeding by Dental teams - a survey of early career dentists**

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### **Abstract**

**Background:** Breastfeeding provides a range of positive health benefits for both mother and baby. Due to maternal exemption of dental charges, dentists have access and opportunity to provide information to expectant and nursing mothers and thus are in an optimal position to positively influence breastfeeding behaviour. Little is known, however, about the attitudes or ability of early career dentists to support and encourage breastfeeding in practice.

**Methods:** A cross-sectional survey of early career dentists in the East Midlands was conducted. The survey questionnaire assessed levels of confidence, knowledge and practice regarding breastfeeding.

**Results:** 70 respondents participated (response rate=72%). Only 13% (n=9) of respondents reported promoting breastfeeding. Confidence in giving breastfeeding advice was low and the majority of respondents were unable to correctly identify all the health benefits from breastfeeding (99%, n=69).

Barriers identified in supporting and encouraging breastfeeding were lack of knowledge (81%, n=57), lack of confidence (63%, n=44) and lack of time (52%, n=36). Approximately two thirds reported they had never received training and a majority felt they would benefit from this (86%, n=60).

**Conclusion:** Early career dentists in the East Midlands reported limited knowledge and a lack of confidence in the delivery of breastfeeding advice. Wider incorporation of training into undergraduate and postgraduate programmes could be considered, which may improve breastfeeding rates.

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**Competing interest statement:**

LP, JLB, JM and RM have no competing interest

**Author contributions:** LP, JLB and RM designed the study and wrote the protocol. LP collected the data and wrote the draft of the manuscript. LP undertook the data analysis, supervised by JLB. All authors contributed to the interpretation of the findings. JLB, JM and RM provided critical revisions to the article, and all authors approved the final version of the article to be published. LP acts as guarantor of the manuscript.

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## **Introduction**

Evidence for the beneficial effects of breastfeeding for mothers and infants has rapidly evolved over the past three decades and now clearly demonstrates its potential to save, improve and shape an infant's life course (WHO, 2015, UNICEF UK, 2018).

In the UK breastfeeding rates remain lower than other high-income countries (WHO, 2015), where less than 1% of women are breastfeeding at 12 months (WHO, 2015). Approximately 81% of new mothers will initiate breastfeeding at birth (Victoria et al 2016), however, only 50% of women are still breastfeeding at six weeks (Do et al 2014). It is now recommended that the optimal duration of exclusive breastfeeding is six months (Bolling et al 2007, McAndrew et al 2012) however only 34% of UK mothers are still breastfeeding at this age, and less than 1% are exclusively breastfeeding (Bolling et al 2007, Do et al 2014).

With increasing evidence to support the health benefits associated with breastfeeding (Romero et al 2011, WHO, 2015), and an associated cost-saving to the NHS of £40million (Romero et al, 2011), there has been a national call to declare breastfeeding a major public health issue in the UK (Romero et al 2011). The British Society of Paediatric Dentistry (BSPD) and Public Health England (PHE) agree that health professionals and dental teams have a key role to play in supporting and encouraging women to breastfeed (PHE, 2018, BSPD, 2018). This is supported by the UNICEF Baby Friendly Initiative (BFI) which provides an evidence-based

framework for developing a whole system health approach to supporting breastfeeding (UNICEF UK, 2013, PHE, 2018).

Robust evidence demonstrates the inverse association between breastfeeding and the incidence of breast cancer in women (Victora et al 2016) and there is evidence to suggest a reduced risk of ovarian cancer (Chowdhury et al 2015, Victora et al 2016). Research has also shown a risk reduction in type 2 diabetes (95% CI 0.57-0.82) (Aune et al, 2014, Chowdhury et al 2015), reduced maternal and postpartum depression (Dias and Figueiredo 2015, WHO, 2017) and future cardiovascular health benefits in women who breastfeed (Peters et al, 2017, Nguyen et al 2017).

Exclusive breastfeeding for up to six months has consistently been shown to protect against infant mortality (Victora et al 2016) and reduced morbidity for a number of conditions, including: diarrhoea (Victora et al 2016), gastrointestinal infections (Kramer et al 2001) and respiratory infections (Horta et al, 2013). Furthermore, breastfed infants have a 13% reduced risk of being overweight or obese in the future (95% CI 6-19) (Horta et al, 2015). With increasing obesity levels and associated health and economic costs predicted to rise further in the UK (Agha and Agha, 2017), a reduction in the prevalence of obesity would have a significant impact on NHS cost-savings (Renfrew et al 2012).

Dental decay is largely preventable (SACN, 2018), costly (PHE, 2017), and causes significant impact on the wellbeing of children (SACN, 2018). Dental caries is now considered to be the most common chronic disease in children (Benjamin, 2010), remaining the most common reason for admission to hospital for five to nine-year olds (RCS, 2016). Evidence relating to infant feeding as a risk factor for dental decay

can be inconsistent and a potential source of controversy and confusion for new mothers (Tham et al, 2015, Doherty 2017). It has been reported that children who experience more breastfeeding up to 12 months of age have a 50% reduced risk of dental caries versus less breastfeeding (OR 0.5; 95% 0.25,0.99) (Tham et al 2015). There is no evidence that reducing breastfeeding on demand from 12 months of age will prevent tooth decay (PHE, 2018) and current recommendations are that women are advised to work closely with their health practitioner to minimise the risk of decay, if they choose to breastfeed after 12 months (BSPD, 2018). Other potential dental protective effects of exclusive breastfeeding include a reduction in risk of malocclusion (Peres et al 2015, Peres et al 2015, Victora et al 2016) and anterior open bite (AOB) in the primary dentition (Romero et al 2011).

Despite this, breastfeeding and its association with dental and wider health effects continues to trigger debate amongst dental and health professionals (Lavigne, 2013). Statistics repeatedly demonstrate that only 57% of women feel they received enough support and information about breastfeeding when they needed it (RCM, 2014). Due to maternal exemption of dental charges lasting up to 12 months after the date of birth of the infant (NHS Choices, 2017), dentists have access and opportunity to provide information to expectant and nursing mothers (Radzyminski and Callister, 2015). As a result, dentists have the potential to influence and support breastfeeding decisions, which in turn may increase initiation rates (Dann 2005). Little is currently known, however, about the attitudes or effectiveness of dentists giving advice on breastfeeding initiation or perseverance. Specifically, no current literature can be identified relating to early career dentists (DF1 and DCT dentists) and breastfeeding promotion or practice. The aim of this study, therefore, was to evaluate the

knowledge and confidence of early career dentists in the East Midlands, in relation to the delivery of breastfeeding advice to patients.

## **Methods**

An opportunistic convenience sampling frame was used to identify and recruit all Foundation Dentists (DF1) and Dental Core Trainees (DCT) who were enrolled within Health Education East Midlands for the 2017-2018 academic year. The demographic profile of this group is variable with mixed genders and ages attending from a variety of undergraduate dental schools across the UK.

The questionnaire survey was designed to assess levels of confidence, knowledge and practice regarding delivery of breastfeeding advice, and included demographic questions on geographical region, gender and year of training. A series of multiple-choice questions were used to assess the current practice of dentists and their knowledge and confidence of breastfeeding and related dental health effects, with free-text opportunities to provide more detailed responses.

Before the delivery of the questionnaire, a pilot study comprising of 10 postgraduate students and five clinical dentists was conducted. Minor formatting and grammatical modifications were made to the survey as a result of feedback. The final version of the questionnaire was delivered in a paper-based format to early career dentists in March and April 2018 at regional study day events, with the exception of one group, who received the survey by email using a DCT representative.

Results are presented using either as frequencies with percentages for categorical data, or as medians with interquartile ranges (IQR) for continuous data. Associations

between responses by gender and year of training were tested using chi-squared and Mann Whitney U tests. P values < 0.05 were deemed statistically significant.

## **Results**

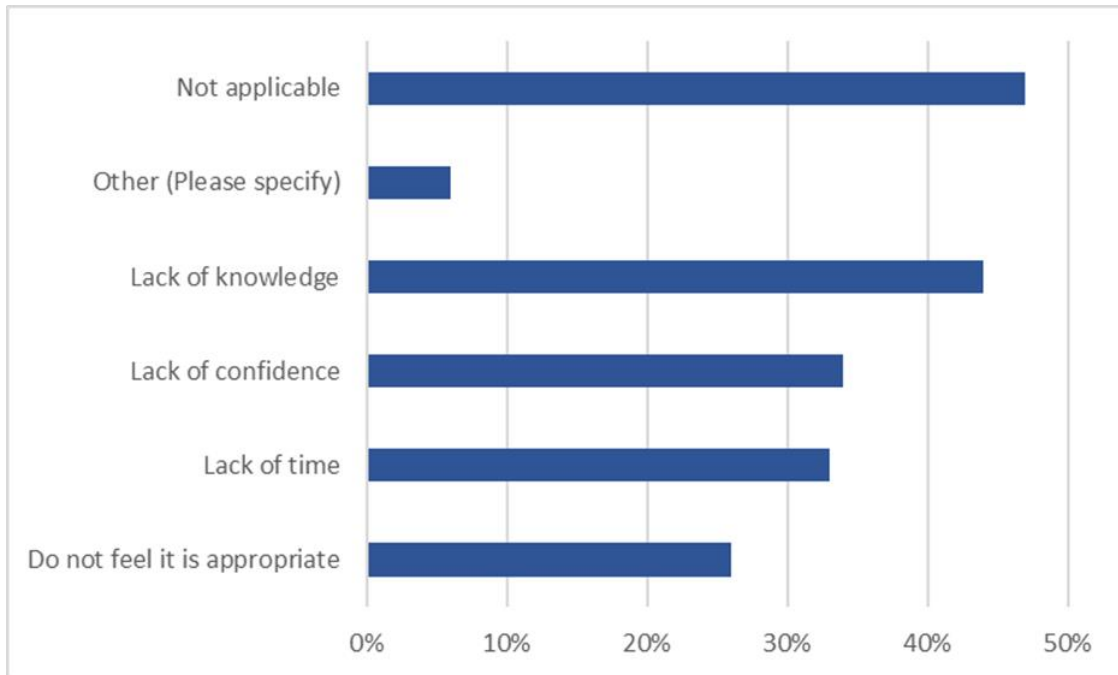
From a total of 97 eligible participants, 70 responded to the questionnaire (72% response rate). The majority of respondents were female (59%, n=41) and were foundation dentists (81%, n=29).

Only 13% (n=9) of respondents reported promoting breastfeeding and its beneficial effects during their practices, with no significant differences seen by year of training (DF1 versus DCT, p=0.63) or gender (female versus male, p=0.80).

The main reasons reported for not promoting breastfeeding was: they did not feel it was not applicable to their role (47%, n=33); a lack of knowledge (44%, n=31) and a lack of confidence (34%, n=24) (responses not mutually exclusive) (figure 1).

Figure 1: Reasons reported by early career dentists for not promoting breastfeeding.

Respondents could select more than one appropriate answer, resulting in a total that exceeds 100%.



Confidence levels in giving breastfeeding advice was low (median score 3 out of 10, IQR 1 to 5) with no significant differences seen by year of training (DF1 versus DCT,  $p=0.67$ ) or gender (female versus male  $p=0.94$ ).

When considering the health benefits of breastfeeding to the mother, only one respondent (1%,  $n=1$ ) correctly identified that breastfeeding reduces the risk of obesity, type 2 diabetes, and ovarian and breast cancer. However, 39% ( $n=27$ ) identified that breastfeeding reduced the risk of two of these conditions.

When considering the health benefits of breastfeeding to the infant, approximately half of responders (51%,  $n=36$ ) reported that breastfeeding could be used as a strategy to reduce the risk of either malocclusion; dental caries or halitosis. However, there was no significant difference by year of training (DF1 versus DCT,  $p=0.42$ ) or gender (female versus male,  $p=0.13$ ). Only 4% ( $n=3$ ) correctly identified that breastfeeding potentially reduces the risk of both dental caries and malocclusion.



The barriers identified by early career dentists in delivering breastfeeding advice were lack of knowledge (81%, n=57), lack of confidence (63%, n=44) and lack of time (52%, n=36). Confidence as a barrier was reported more frequently in DF1 than DCT ( $p=0.04$ ), and knowledge as a barrier was reported more frequently in females than males ( $p=0.02$ ). However, no other significant differences were found.

The majority of respondents reported they had never received training on the delivery of breastfeeding advice (64%, n=45). Over a third (34%, n=24) had received undergraduate training and only 3% (n=2) have received postgraduate level training. The vast majority of respondents reported that they would benefit from receiving formalised training (86%, n=60), with females being significantly more likely to request training than males ( $p=0.001$ ). Of those respondents who wanted training, 57% (n=40) requested online training and 61% (n=43) requested face to face interventional training. 26% (n=18) of the full sample of respondents requested they would like both training options. The majority of respondents also reported that receiving CPD accredited training could act as an incentive to increase the likelihood of early dental trainees attending training sessions (71%, n=50).

## **Discussion**

The majority of early career dentists in the East Midlands reported that they were not promoting breastfeeding nor its beneficial effects with their patients, and this appeared to be independent of year of training or gender of the dentist. The main reasons reported for this lack of promotion were a lack of knowledge, confidence and perceived applicability to the dental role. Respondents also reported a lack of

training in the delivery of breastfeeding advice and the majority indicated that they would benefit from further training.

Despite the beneficial health effects being established and well-reported, a large majority of early career dentists have poor knowledge of these. This corroborates with recent evidence that other health professionals have a lack of knowledge about breastfeeding (Grant, 2002, Feldman-Winter et al 2010). The fact that approximately half of dental trainees have poor knowledge that breastfeeding has potential oral health benefits is concerning. As health professionals, it is important for dentists to take the opportunity to encourage and support women to breastfeed (PHE, 2017) and it is possible that no other health professional will pass on specific dental knowledge. In addition, dentists must be equipped with accurate knowledge of the oral health impact of breastfeeding, in order to follow evidential preventative guidance (DOH and PHE, 2017).

The reported lack of knowledge on the health effects of breast feeding may reflect a lack of inclusion of breastfeeding in undergraduate or postgraduate teaching and this may explain why confidence was low in the majority of the sample. Breastfeeding education training in a medical environment results in both higher knowledge and confidence of recipients (Hillenbrand and Larsen 2002, Ogburn et al 2005, Feldman-Winter et al 2010, Vandewark 2014). Since knowledge levels and attitudes towards breastfeeding are strongly linked (Hillenbrand and Larsen 2002), there is potential to address this gap in promotion of breastfeeding advice by dental trainees through improved education. Training and education may also address the identified barrier of lack of time, in accordance with the Making Every Contact Count Agenda (Bishop, 2008).

The majority of respondents reported that they would like some incentive to increase the likelihood of delivering breastfeeding advice to patients, with the majority requesting CPD accredited training. The value of performing CPD training for professionals has been well evidenced in health literature (Britton et al 2007, Filipe et al 2014). Providing dentists with an accredited certification of achievement post training may serve as a measure of performance and accelerate the gain of new knowledge (Britton et al 2007). Additionally, providing dentists with accredited training would be both feasible for providers and motivate dental clinicians to achieve their CPD targets (GDC, 2018).

Due to the small sample size, the findings from this research are based on reported behaviours, knowledge and behaviours and must be interpreted with caution.

While the results of this survey are a useful indicator of both the knowledge and confidence of early career dentists across the East Midlands, caution must apply in generalisation to all dentists or wider members of the dental team. Further research should be conducted across all UK deaneries and the wider dental teams to ascertain the extent of the issues identified in this survey across a larger sample.

The questions included in the survey were not validated and reliant on self-report and so it is possible that responses around the lack of education are not a true reflection of the dental curricula. Future research should collect data from undergraduate and postgraduate dental curricula to confirm the presence or absence of education relating to breastfeeding.

Every reasonable effort was taken to ensure consistency in data collection methods to ensure internal validity was maintained. However, as one group received the survey using the DCT representative, it may be possible that there was external influence through accessing information via other sources such as the internet.

## **Conclusions**

Early career dentists in the East Midlands reported limited knowledge and a lack of confidence in relation to the delivery of breastfeeding advice, which appeared to be independent of year of training and gender. A lack of undergraduate and postgraduate training in breastfeeding was reported, with a subsequent desire for face to face interventional training and/or online training made clear by respondents. Further research should be conducted to establish whether dental teams are effective vehicles for the delivery of breastfeeding advice in practice to increase breastfeeding rates. If confirmed, wider incorporation of training into undergraduate and postgraduate training programmes across UK deaneries and dental schools could be considered.

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