

Exploring Infant & young child feeding practices and perceptions in Tower Hamlets, London and the role of Early Years' service providers in supporting healthy feeding practices

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Abstract

Introduction: The aim of the research was to gain a greater understanding of infant and young child feeding perceptions and practices in the London Borough of Tower Hamlets and the role of early years' providers in supporting healthy feeding practices. The research was used to feed into ongoing commissioning and resource allocation priorities, taking into consideration continuing budget restrictions, to achieve nutrition outcomes through effective early years' public health interventions.

Methodology: A qualitative methodology was applied. The target groups were mothers with children under five years old, early years 'service providers and carers. The participants were selected using purposeful, convenience and snowball sampling methods. In total 18 focus group discussions, 36 interviews and 3 direct observation sessions were carried out with 144 participants across the borough.

Findings: There was generally widespread knowledge that breastfeeding is best for infants, however, there was less clarity on the best time for introducing complementary food and drinks to infants. Mothers trust health providers for information, but most used the internet, family and friends for information as it was easier to access. Some mothers reported mixed messages, pain, and pressure from the media, families and friends as the main reasons for changing from exclusive breastfeeding to mixed feeding. Some mothers reported lack of support postnatally and inconsistent advice such as service providers giving mixed messages, especially regarding feeding in public, mixed feeding and when to introduce other fluids and foods. The borough's infant and young child feeding support workers were valued, but not all mothers knew about the service. Certain groups, such as those with English as a second language, teenage mothers and mothers without childcare reported not using services routinely.

Conclusions: Following presentation of the key findings, and a discussion with early years' service providers, the Tower Hamlets Public Health Division suggested practice changes which were adopted by the LBTH council. The council committed to continue supporting the Infant Feeding & Wellbeing Service (known as the Baby Feeding Service) to continue to improve infant and young child feeding practices. Health visitors are encouraged to use their new 3-4 month contact with post-natal mothers, in addition to the five mandated universal contacts, as an opportunity to offer nutrition support to mothers. The council also approved increased nutrition capacity within the Health Visiting and Public Health team. More information is now available on the Tower Hamlets website to support mothers with clear nutrition and infant feeding information with details of the many services mothers can access in the borough.

Keywords: Infant and Young child feeding, complementary feeding, exclusive breastfeeding

Introduction

The aim of this research was to gain a greater understanding of infant and young child feeding perceptions and practices, in the London Borough of Tower Hamlets (LBTH). The research was used to feed into an internal review of Tower Hamlet's public health funding priorities, considering continuing funding constraints. The research also enabled voices from early years' service providers to feed into LBTH's early years' nutrition programme priorities.

Strengthening infant and young child feeding practices and perceptions using a health systems lens

Nutrition is a key component for the healthy growth and development of children. Globally one in three people are suffering from hidden hunger, or deficiencies in essential

nutrients such as iron or vitamin D (Black et al 2013). The most impactful child health and nutrition intervention is to promote exclusive breastfeeding for the first six months of life (Black et al 2013). If all infants were exclusively breastfed for six months, we could prevent 823,000 infant deaths globally each year while also reducing the risk of asthma, ear infections, poor oral health, and impaired cognitive development (Victora et al 2016). Breastfeeding also reduces the risk of obesity and non-communicable diseases like diabetes (Victora et al 2016).

Each year 20,000 cases of breast cancer could also be prevented if more mothers breastfed their infants (Victora et al 2016). Despite this evidence only 41% of infants globally were exclusively breastfed in 2018. This has increased slightly since 2013, but there is still an uphill struggle to ensure all infants have access to the optimal nutrition and immunity offered by breastmilk (UNICEF 2017). To support the reduction of preventable under five deaths, 193 countries attending the 2012 World Health Assembly agreed to achieve six global nutrition targets by 2025. One of these targets is to increase the rate of exclusive breastfeeding in the first six months up to at least 50% (WHO 2014). To support countries to achieve this and other global nutrition targets, the UN Secretary General (UN SG), called for 2015- 2025 to be termed the Decade of Nutrition (UN 2015). Peer counselling, putting the baby to the breast within the first hour of life, and implementing national laws to ensure mothers can have time off after work to feed their babies can help mothers to breastfeed for longer (Black et al 2013, Victora et al 2016, WHO 2018). The 2016 Lancet series on breastfeeding highlighted the positive impact that breastfeeding can have on infant health and development with one author clearly dispelling the misperception that breastfeeding was only important in low income countries (Victora et al 2016).

“There is a widespread misconception that the benefits of breastfeeding only relate to poor countries. Nothing could be further from the truth... breastfeeding saves lives and money in all countries, rich and poor alike” (Victora, 2016).

In 1991, UNICEF developed a set of implementation guidelines for health service providers to strengthen national health systems and support mothers more effectively. Their ten steps were revised in 2016 and led to the creation of the Baby Friendly Initiative (UNICEF 1991, WHO 2017). Even when health services implement the ten steps there are still numerous societal barriers which mothers must negotiate to ensure their infants are given the best start in life (Save the Children 2013, UNICEF 2017). These barriers include lack of support, which can lead to poor ‘latching on’ of the baby, resulting in cracked nipples and pain, a common factor cited by mothers when deciding to halt breastfeeding in the first few weeks. Other challenges to successful breastfeeding include mothers’ fears, that they have inadequate milk supply to feed their babies (Rayment et al 2013, UNICEF 2017, Keith 2018a). This leads to the practice of mixed feeding, which reduces milk production (Save the Children 2013). Mothers also cite the fear of body changes or the need to return to work and societal pressure not to breastfeed in public, as key factors for deciding to stop breastfeeding early (UNICEF 2017).

The first milk, or colostrum, has been identified as the babies’ first immunisation, as it has all the essential nutrients and antibodies that an infant needs (Save the Children 2013). Research indicates that often mothers do not understand the actual mechanism of lactation or the fact that the infant’s stomach is very small. In fact, at birth, an infant’s stomach only holds around 20 mls of fluid (Bergman, 2013). UNICEF states that a key step to increasing the numbers of infants exclusively breastfed is that they stay in the same room as the mother, to stimulate the release of essential hormones to produce and release breastmilk. This practice is known as ‘rooming in’ and can help to reduce the barriers to effective breastfeeding, by avoiding poor ‘latching’ and

increasing breastmilk production (UNICEF, 2017). Evidence demonstrates that when mothers are given this information in antenatal classes and supported in establishing breastfeeding in the post-natal period, they are likely to exclusively breastfeed their babies for longer (Victora 2016, Save the Children 2013).

London Borough of Tower Hamlets (LBTH) context

Tower Hamlet’s population in 2015 was estimated to be 287,167. Of this, 7.7% were children (21,843) aged 0-4 years old. The borough’s profile is very diverse. The 2011 Census showed 69% of the Tower Hamlets population came from 18 different minority groups. 31% of the borough is White British, 32% Bangladeshi and 12% of Other White origin, which include Europeans, Australians and North and Central Americans (LBTH 2013). Tower Hamlets is among the most deprived boroughs in England and was ranked 10th lowest of the 326 boroughs in the country in the index of multiple deprivations (IMD) in 2015, 39% of children live in an income deprived household (LBTH 2015b).

Infant and young child feeding in Tower Hamlets

In line with global evidence on what works, LBTH’s council has demonstrated commitment to supporting more mothers to exclusively breastfeed their babies, through the borough’s Infant Feeding and Well Being service (known as the Baby Feeding Service), since 2011. This a robust service which provides hospital support and community outreach to all mothers in the borough. The team also trains volunteer peer counsellors, who work with them in the community, to support more women to exclusively breastfeed their babies, if that is their decision, or with other infant feeding support as required. Beginning over 20 years ago, Tower Hamlets was one of the first London boroughs to use a breastfeeding support service (recently renamed infant feeding and wellbeing service to be more inclusive).

It is mandatory for all staff, involved in early years’ care, to attend a two-day training session within six months from signing their contract. There are two baby feeding service coordinators, one based in the maternity service and the other based in the health visiting service.

In 2016/17, 82% of women initiated breastfeeding and 43% of mothers were still exclusively breastfeeding at 6-8 weeks (see Table 1). This is much higher than the 30% UK average and 31.6% London exclusive breastfeeding rates (PHE 2017). In 2017/18 Quarter 1, the six-week exclusive breastfeeding rate had increased to 46.9% (see Table 2). However, in the UK only 1% of mothers were still exclusively breastfeeding at 6 months (PHE 2017). The number of mothers carrying out early initiation of any breastfeeding in Tower Hamlets in 2017/18 was 95% (PHE 2019), much higher than the England average of 74.5 % (UNICEF 2018). Table 3 presents more recent data.

Table 1. Breastfeeding prevalence 6-8 weeks after birth in 2016/17 Q4 (July 2017 release)

	# of infants due a 6 - 8-week review	Infants given any breastmilk	Infants exclusively breastfed	Infants partially breastfed	Infants not breastfed at all
England	145318	44.3%	30.3%	14.1%	44.3%
Tower Hamlets	787	87.4%	43%	44.3%	2.5%

Source: Public Health England Official Statistics (2018) (CI of 46.1-46.6%)

Table 2: Tower Hamlets 2016/17 Infant feeding initiation rates (BIFS 2017)

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Exclusive Breast Feeding	74.67%	77.68%	77.94%	74%
Partial Exclusive Breastfeeding	7.06%	3.64%	4.84%	8.36%
Any breastfeeding	82%	81.11%	82.80%	82%
Artificial feeding	14.80%	14.72%	13.09%	13%
Unknown	5.99%	4.13%	4.07%	5.04%

Source: Barts Infant Feeding Services Statistics (BIFSS) 2017

Table 3: Breastfeeding prevalence 6-8 weeks after birth in 2017/18 Q 1: Health Visitor report

	# of infants due a 6 -8-week review	% of infants given any breastmilk	% of infants exclusively breastfed	% of infants partially breastfed	% of infants not breastfed at all
Tower Hamlets	689	83.3%	46.9%	36.6%	9%

Source: Public Health England Official Statistics (2018)

Aims and objectives

The aims of the research were to understand the infant and young child feeding practices of parents and carers of young children: their perceptions, beliefs and knowledge regarding effective feeding practices and to explore the factors that influence these practices with the aim of improving health outcomes of young children in Tower Hamlets. Tower Hamlets has routinely collected data on initiation of breastfeeding and infant and young child feeding at six to eight weeks, but it wanted a deeper understanding as to why so many mothers started breastfeeding (82%) but only half (43%) were still exclusively breastfeeding by their 6 -8 weeks check-up (BIFSS 2017, PHE 2017).

The specific objectives of the study were to:

- explore the perceived factors influencing local infant and young child feeding (IYFC) practices
- consider parental/carer perceptions, beliefs, knowledge and practices relating to infant and child nutrition,
- identify present IYCF practices and perceptions, including the knowledge and practices of health professionals and other early years' staff working with parents and children (0-2 years) on infant and child nutrition and health.

Methodology

The researchers utilised a qualitative methodology to explore the perceptions of key stakeholders regarding IYCF. The researchers reviewed the support, advice and key messages delivered by health care professionals and other frontline staff working with parents and children. Early years' service providers included midwives, nursery nurses, health visitors, public health advisers, family nurses, dentists, nursery school staff, voluntary sector staff and those supporting children with complex needs such as speech therapists and psychologists. The target group were mothers with children under five, service providers and carers. The participants were selected using purposeful, convenience and snowball sampling methods. Mothers were contacted through gatekeepers working in the borough such as those running mother and baby play and massage sessions, informal community groups, churches, mosques, nursery schools, and child centres. In all, 36 key informant interviews, 3 direct observations of health promotion classes and 18 focus group discussions were carried out throughout the borough. The focus group discussions included a total of 144 participants including 95 mothers, 21 service providers, seventeen expectant parents, eight husbands and three mothers in laws. Field researchers were trained in data collection and analysis.

An initial mapping was completed in the borough, to determine where the different ethnic groups resided and to ensure an inclusive approach to sampling. All major ethnic groups were included in the research (Bangladeshi (26), White British (16), White European (12), African/ Caribbean (9), Somali (16) and Chinese (16)). Interviews were carried out in English, Bengali, Somali and Chinese depending on the mother's preference.

Key informants were obtained through purposeful sampling using gatekeepers from the Tower Hamlet's public health team's staff and from snowball sampling from participants. Letters were sent to key informants requesting participation through either face to face or telephone interviews.

Data collection tools included key informant semi-structured interviews, focus group discussions and direct observation of health promotion sessions. Interviews took place in all four regions of the borough, in child centres, cafes, community halls and workplaces of service providers. Informed consent was obtained from all participants, and ethical clearance was obtained from the University of Westminster (ETH1617-1100). Permission was also gained from all locations where data were collected. Interviews were recorded, when consent was given. All interviews were recorded and transcribed and coded together using a thematic analysis to identify the key issues raised by the participants.

Findings

Five key themes emerged with 11 sub themes:

1. communication (knowledge from different sources, misperceptions and influences)
2. reaching the most vulnerable (awareness, trust and access)
3. skilled staff: constraints for policy adherence (capacity and accountability)
4. lack of adequate financing: impact of austerity measures (resource allocation and transparency)
5. governance: need for clear nutrition leadership (integration, role clarity).

The sub-themes and quotes related to each theme are provided in Table 4 and discussed in more detail afterwards.

Table 4. Quotes to support themes

Themes	Sub-themes	Quotes
Communication	<p>Knowledge from different sources:</p> <ul style="list-style-type: none"> • internet, • service providers, • friends and • family 	<p>“... if you do need something, a quick bit of advice, I’d use the Internet. A lot of the times I look at the forums to see what other mums or other parents are saying.” <i>Mother</i></p> <p>“Internet mostly.... the Internet is much easier than phoning GP and going somewhere”. <i>Mother.</i></p> <p>“Last time the health visitor brought a translator and that was helpful. One-to-one sessions are really appreciated especially with a translator.” <i>Mother</i></p> <p><i>“the consistency of a message is important so that they are hearing the same message over and over again rather than 10 different messages.” Service Provider</i></p> <p><i>“There are just so many mixed messages. Some of the midwives and other workers have different attitudes. You have no idea what you’re doing at the beginning. You want a clear, calm person. Whereas, you’re getting different people coming in every hour, giving you different advice... They’re stretched, you know.” Mother</i></p>
	<p>Misperceptions:</p> <ul style="list-style-type: none"> • breast is best, but harder than expected • mixed feeding is ok if baby is hungry • you should not feed in public in UK • I do not have enough milk to feed the baby • complementary feeding before six months is fine if your baby is hungry 	<p><i>“It’s so hard to breastfeed, more than you ever thought it would be. I went to classes and got told the way, what it’s about and how to do it. But when you’re doing it, it’s completely different. You need someone there to go to.” Mother</i></p> <p><i>“However, the first day baby was born, I do not have enough breast milk and the baby keep crying at night, then the nurse gave the baby a little bit bottle milk.” Mother</i></p> <p>“breastmilk has too much sugar and that is why your baby is not sleeping”, “one bottle will not make a difference.” <i>Service provider</i></p> <p><i>“Breast is best, but it is your choice and don’t feed in parks or in public.” Service Provider</i></p> <p><i>“They were on the hungry baby milk because the breast milk is not as thick as formula. I found formula helped fill my babies up and helped them sleep. Whereas breast milk it was like waking up every half an hour and I found I didn’t produce that much.” Mother</i></p> <p><i>“I’ve had five G.P.’s advising mothers to water down the baby’s milk to stop constipation, and somebody came in for a six-week check who added powder sugar to babies’ milk bottles.” Service Provider</i></p>
	<p>Influencers: service providers, families, society, and work</p>	<p>“...we’ve had women who wanted to breast feed their babies, but bottle fed them because the mother in law was like you know you need to get back to your chores now.” <i>Service Provider</i></p> <p><i>“There is a grandmother and great grandmother in the house so when she tries to make a change the grandmother is involved-- or the child starts to cry, so the grandmother says oh just give her milk.” Service Provider</i></p> <p><i>“Many times, I see parents are very confused... the health visitor tells you one thing and then they come to me and I tell them something different to they get very confused and then many times just listen to a relative.” Service Provider</i></p>

Reaching the most vulnerable	Lack of awareness of support available	<p><i>"I think there should be more information letting mothers know that there are health care visitors that can help you and that they are not just on the phone, but they can come and help you." Mother</i></p> <p><i>"I really wanted to breastfeed; without the support it would've been very, very difficult. I think there are some people who still don't know enough about it. I've got friends who are having real trouble and don't seem to be getting as much support as I've had. I think you do have to go out of your way to seek it. ... just emphasize this service is available." Mother</i></p>
	Trust of health service providers	<p><i>"It's always more successful when they trust you and they like you. (...). If problems arise, they know to come back and see us and if we can't help them, they know that we can refer them to the right people." Service Provider Children's Centre</i></p> <p><i>"I fear that if I ask questions, I will be labelled a bad parent, and social will be informed." Mother</i></p>
	Access to services: <ul style="list-style-type: none"> • safety • language barriers • reaching mothers without child care and teenage mothers 	<p><i>"Mothers say they are afraid of going through the parks due to needles from drug users and they worry their child will run into the road and be hit by a car". Service Provider</i></p> <p><i>"Language barriers (for Chinese, Somalian, Polish and Romanian parents)" Service Provider Health Visitor "...opening times on Saturdays would be really helpful, as my husband speaks English." Mother</i></p> <p><i>"Last time the health visitor brought a translator and that was helpful. One-to-one sessions are really appreciated especially with a translator." Mother</i></p> <p><i>"Hard to attend child centres due to lack of creche for other children." Mother without child care</i></p> <p><i>"I feel that the sessions are not for me; they are for older moms, and everyone stares at me." Teen Mother</i></p>
Availability of skilled staff	Capacity:	<p><i>"(...). Recently we had more staff and more focus on key mandated contact, so we are seeing bigger numbers..." Service Provider: Health Visitor</i></p> <p><i>"You hear plenty about the benefits of breastfeeding. All over the hospital there's big signs saying, "It's good for you to breastfeed." But then you don't actually get the support from the hospital staff." Mother</i></p> <p><i>"...a few bottles won't make a difference; the mothers need their sleep and we do not have time to help them when they need it. The breastfeeding support team only visit in the mornings...we have to cover 24-hour support and we do not have time..." Service provider</i></p>
	Accountability for policy adherence	<p><i>(...) because there is the baby feeding service, I think that has made a huge difference ... every mum who has a baby will be contacted and I think that is amazing. One mum is a second-time mum and if the service gets cut, she won't be called again, and I think that is quite sad ..." Service Provider</i></p> <p><i>"...some new changes on the postnatal ward have not made breastfeeding easier...having dads stay overnight in some rooms hasn't helped...the men like to feed the babies." Service Provider</i></p> <p><i>"..although all the health workers (midwives, nursery nurses, health care assistants) and health visitors get their 2 day training on the Baby Feeding breastfeeding initiative within six months, some staff are still very keen on giving the babies formula milk bottles (especially at night)." Service Provider</i></p> <p><i>"... trained health workers still tell the mothers their babies are hungry, and they do not have enough milk so they should give the babies a bottle..." Service Provider</i></p>

Lack of adequate financing	Lack of resource allocation and transparency	<p><i>"The cut to funding, it's noticeable. It's the parents and it's the children who are being affected, really" Service Provider</i></p> <p><i>"..There used to be young mother sessions which I attended but these have been stopped."</i> Teen mother</p> <p><i>"...the main thing is resources ... we've just gone through a restructure with all the government cut-backs and stuff, so our teams have reduced by about 10% or something like that... our budget for training and stuff is not as it used to be so it's not quite as easy."</i> Service provider</p>
Governance	Integration	<p><i>"...if we could have access to notes and records from other service providers in the CCG and NHS we could work in a more effective and integrated manner."</i> Service Provider</p> <p><i>"I think we need to find a way of following up from children's centers to know the parents who attend, and the parents who don't attend, and for the parents who don't attend, if we can ask them to come in for a quick review- I know they have a review at 8 months and at 27 months ... if we can find other things that can bring parents in between those two official reviews."</i> Service provider</p> <p><i>"Day cares and children's centers, between support workers and health visitors, between GPs and dentists. Everything needs to be a lot more joined up. There are lots of services around here, and they're all scattered around. But if all these services are integrated, and the mum goes to the dentist, she should get the same message, she goes to the GP, and she hears the same message..."</i> Service provider</p>
	Lack of clarity of roles	<p><i>"..we had a healthy eating policy, but now our nutritionist is gone so we do not know who to ask for support..."</i> Service provider</p> <p><i>"... it would be really good to have some nutrition support who we can refer parents to on nutrition...health visitors are already busy so it is hard to add another one and it may not happen."</i> Service Provider</p>

Communication: (Knowledge from different sources, misperceptions and influences)

It was clear that most mothers knew about the benefits of breastfeeding. However, many mothers reported that they did not realize how hard breastfeeding would be. Not all mothers knew about the general support network for mothers in the borough, including the Infant Feeding and Wellbeing Service (known as Baby Feeding Service) in Tower Hamlets. Those that did know about it, did use it when they went home, and reported a high level of satisfaction with the service. Although most mothers and service providers knew that breast was best for the baby many mothers and service providers did not understand that babies need very small amounts of fluids in the first few days and their bodies will almost always produce enough of the colostrum. The lactation mechanism was not well understood by mothers and some service providers. Mothers were not clear on when they should add complementary foods, with three to four months being the most common answer. Many mothers and some service providers did not think that exclusive breastfeeding was essential. All health visitors had correct policy knowledge on the boroughs infant and young child feeding policy and support services.

Knowledge from different sources

In general, there was clear maternal knowledge regarding some public health messages, such as *'breastfeeding is best'* and *'too much sugar is bad for you'*, but there was less clarity on where to seek information on specific nutrition questions. When mothers were asked where they

found their information on IYCF, the most prevalent answer was on the internet, using their smart phones. The Mumsnet forum was specifically mentioned by many mothers.

However, when asked who they would like information from, the mothers stated that they would trust information given to them by health service providers the most; yet, only if the service providers all gave the same message. Mothers reported numerous mixed messages. Some service providers (including midwives, nursery nurses and GPs) had advised mothers to give bottles or stop breast feeding. All these messages were from staff who had completed the mandatory two-day IYCF training in the borough.

When asked how mothers would like the information most mothers preferred a one to one discussion with health professionals, or group sessions. There was a consensus that leaflets were not always helpful, and in fact the contact details were often incorrect when mothers tried to use them. Mothers really appreciated having translators present, but many mothers stated that language was a big barrier. When mothers were confused by mixed messages, they then would ask their friends or family members (after looking for an answer on the internet).

Mothers reported feeling pressured by their families to give a bottle when their baby was hungry. Other parents complained that their families and parents were always giving their children sweets. Mothers reported that their families often echoed TV commercials, which encouraged mothers to bottle feed, or give dad the role, to help them have more rest or allow them to do more household chores.

Misperceptions affecting practices

Breast is best, but harder than expected

Service providers, specifically in the postnatal ward found that they did not have enough time (especially at night) to support mothers to feed their babies, often leaving infant feeding support to nursery nurses.

Mixed feeding is ok if baby is hungry

Research participants perceived that mixed feeding (breast and bottle) was normal for infants. Mothers reported that hospital and clinic-based service providers (and their own friends and families) would tell them that their baby was hungry and required a bottle to sleep through the night. Many of those interviewed felt that giving some bottles would not make any difference, including some health professionals that had already been trained.

Breast is best, but you should not feed in public in UK

Most mothers felt that a strong negative stigma was attached to breastfeeding in public, hence they felt pressured to bottle feed in public, and breastfed only at night at home. At one antenatal class observed, a midwife also advised that breastfeeding was best but better “*not done in the park*”. This stigma is unique to the UK, compared to many of the countries where the women have come from. In their home countries, many of the mothers reported that breastfeeding was the normal practice, even in public. Chinese mothers interviewed reported high political commitment in China to supporting mothers to breastfeed, with special postnatal homes for mothers to reside in, for a month postnatally, to ensure they get enough support and rest. One Chinese mother said

she was going to travel home to China to have her baby, as she had found it hard to breastfeed in London, due to the negative stigma she felt.

I do not have enough milk to feed the baby

One of the most common perceptions, and reasons for halting exclusive breastfeeding, was that the mother did not think they had enough milk. Mothers, family members and many service providers stated that if the baby was crying, not sleeping or losing weight the mother did not have enough of her own milk and needed to add artificial milk feeds. Some mothers reported that their babies were given bottles before they left the hospital, usually at night. One mother reported that her GP had advised her to stop breastfeeding, as there was too much sugar in breast milk which would lead to the child getting dental caries.

Complementary feeding before six months is fine if your baby is hungry

The second most common area for mixed messages was when a mother should start adding complementary feeds. Around half of the mothers reported being pressured by family members (mostly mothers in law and sisters) to start giving solids from 3 to 4 months old. Mothers reported that popular infant foods state on their labels that they are for children from 3–4 months old. While other mothers reported that when they gave solid food too early their children started to choke resulting in these mothers then delaying the introduction of textured food until the child was older.

Influencers: service providers, families, society and returning to work

Overall, if mothers were given effective support, they wanted to do the best for their children, which was breastfeeding. However, mixed messages from service providers, families, society and the media often led mothers to change their practices, despite their first intentions and knowledge.

Most mothers trusted service providers, if they gave clear messages in a one to one or group context, in a language they could understand. However, many women reported being influenced strongly by their family especially mother in laws or older sisters. Mothers reported that returning to work was one reason for starting infants on bottles. Many mothers were not aware that they could continue to breastfeed after they returned to work, while others felt pressured by family members like their mother in law, and some fathers, to stop breastfeeding and get back to household chores.

Reaching the most vulnerable: lack of awareness, trust and access

Lack of awareness of support available

The Baby Feeding Service was praised by all that had used it, but there were mothers who did not know that this service could support them, once the midwives handed their care over to the health visitors. Health visitors reported high coverage of their mandated meetings with mothers. However, mothers noted that these contacts were infrequent and time pressured. Mothers who do

not attend antenatal classes, often those with other children, were not aware of all the support services available, especially if English was not their first language. Mothers with older children reported that they did not know that they could still use the infant feeding support service. There was a perception that the services were for first time mothers only among some mothers. There was also a lack of certainty about how long the service was available. Many women needed support on day 3 and again after a few weeks, but were not sure who to contact, after the midwife discharged them. Some mothers with English as a second language stated that they did not use the services, as they did not understand English well enough.

Trust of health service providers

Service providers understood that getting women to trust them was essential to ensure they used the services. However, certain mothers were afraid to state they were having problems in case they were labelled as bad mothers.

Access barriers: safety, language, mothers without child care and teenage mothers

There were several constraints reported which prevented mothers accessing services such as a perceived lack of safety travelling from home to the clinics, especially when walking with children. Mothers without child care and teen mothers reported that services were not always accessible or acceptable for them.

Safety

Some mothers felt that they were unsafe walking to the clinics with their children as they had to pass busy roads and parks were often dirty with needles and more dangerous rubbish. These perceptions were supported by direct observations, by the researchers, walking to clinics from local transport points.

Language barriers

Many mothers mentioned that language was a barrier (especially for mothers from China, Eastern Europe and Somalia). Although the borough provides very good services for Bengali speaking mothers (from Bangladesh), these women identified other challenges such as what they can do with their other children and their workloads, making it hard for them to use services. The lack of adequate translation services for non-English speakers, especially from non-Bangladeshi immigrant communities was a common constraint. Many mothers stated that if classes were on Saturdays their partners or family members could attend with them and help with translation.

Mothers without child care and teenage mothers

When asked if they attended nutrition sessions, some mothers stated that they did not due to the time of the session, or the fact that they had other children and no child care. Some mothers do not have their children in nursery school and miss out on some essential services. First time mothers were more likely to attend child centres and they reported finding them very helpful for information and support. Many children centre training sessions observed had only two or three

mothers present, while family sessions held on a Saturday had over 31 parents attending with multiple children and their partners. When mothers were asked why they came to the “stay and play” and not the child centre sessions, they stated that they could bring all their children to the former, and that their partner could attend with her. Saturdays were also quieter days for the families when they had more time.

Teen mothers felt that the services did not cater for their needs and felt stigmatised when they attended sessions. Teens living in care with their young children stated that they trusted their friends and families more for advice than health professionals or link workers.

Skilled and supported staff: constraints to policy adherence: capacity and accountability

Capacity

Staff are trained in effective IYCF, but their workload reduced their capacity to give effective support to mothers, especially at night time. Health visitors were also being trained in healthy eating, but more capacity is required to support parents effectively. All service providers interviewed reported having an increased workload, which they perceived to be due to budget constraints. All early years’ service providers interviewed had completed their two-day infant feeding training, but many had no training on healthy eating.

Some mothers reported a lack of support to establish breastfeeding on the postnatal ward, while other mothers praised the support they were given by the breastfeeding team, especially when they received home visits. Mothers reported a support gap for infant feeding between their six-week health visitor check and their one-year check-up. Several mothers reported being offered bottles in hospital, while others reported they had changed to bottle feeding after around two weeks, as they felt they did not have support any more. Some were told they did not have enough milk, and not being offered support when they asked for it, especially at night. Mothers reported that they were offered infant feeding support on the post-natal ward with visits during the day; some reported support following discharge also.

Midwives reported that they were working 12 hour shifts often without time to support women with feeding. Nursery nurses interviewed perceived that infant feeding was part of their role, especially at night.

Accountability for policy adherence

The most effectively supported and implemented nutrition strategy was the Community and Hospital Baby Feeding Service (also known as the Infant Feeding and Wellbeing Service or Baby Feeding Service). The borough has prioritised investing resources into strengthening early years’ support systems into baby feeding programmes for over 10 years. All new staff (health visitors, midwives, early years’ children centre staff) are offered two days training to understand the guidelines and standards. Annual audits are tracked to ensure the guidelines are being implemented and to ensure the borough can retain their Baby Friendly UNICEF accreditation. To support service integration there is a quarterly Baby Feeding Initiative Strategy Group meeting chaired by the LBTH Public Health team. However, two of the joint meetings attended by the research team did not include all members of the early years’ service team due to heavy workloads.

Lack of adequate financing: resource allocation and transparency

Most service providers mentioned the negative impact that resource cuts were having on service availability and quality. Service providers reported managing heavy workloads, resulting in reduced amounts of time to support parents. Parents and service providers commented on the number of services that had closed in the last few years and community organisations reported uncertainty regarding future role and funding.

There was low morale within the early years' frontline staff, voluntary services and nursery schools due to uncertainty regarding their roles in the restructure and availability of resources for future work. It should be noted that the research was undertaken at a time of major reorganisation of the early years' public health services. On the post-natal ward, the staff reported long working hours and heavy workloads, with not enough time to adequately support mothers to breastfeed, especially at night.

Some community early years' service providers expressed concerns and lack of clarity regarding their future job security, especially for those working in the voluntary sector, previously commissioned to carry out specific programmes in nutrition and oral health. There was positive news from the health visiting team that their numbers were increasing, which will impact positively on their capacity to carry out their role in the borough.

Governance: integration and lack of role clarity

Some participants were not clear on the roles and responsibilities of the different service providers, especially in relation to nutrition. There was a lack of clarity regarding nutrition accountability, nutrition referrals and support. Mothers and service providers were not sure who they refer nutrition problems to, such as fussy eating, portion sizes and diet diversity. The coordination meetings between the complex mix of acute and public health service providers was a challenge for staff with heavy workloads with meetings in different parts of the borough. Challenges such as sharing records was raised by some staff, who felt this could improve the quality of integrated services. In the key informant workshop, many participants indicated that nutritionists should have a role in improving population nutrition outcomes in the borough, but none were presently employed by the borough (nutritionists are population focused specialists in public health).

Some service providers felt that communication between all providers (including CCGs, NHS services, Family Health Nurses, Health Visitors and Baby Feeding Services) could be strengthened and more role clarity, especially in relation to nutrition would be helpful. Primigravids were more likely to use the Baby Feeding Services and tended to continue to breastfeed for longer if they were supported.

Discussion

There was generally widespread knowledge that breastfeeding is best for infants. However, there was less clarity on when to start complementary feeds. Families and friends often give advice based on what they did when they were young. When they are given mixed messages, mothers reported that they tend to rely on family advice or information gathered from the internet. Mothers requested that pressure from the media to stop breastfeeding or add other foods early from three

months needed stronger government interventions. This is in line with research from Save the Children (2013), Victora et al (2016) and UNICEF (2017). Mothers also reported that support service leaflets contact details often do not seem to work or there are long delays in securing appointments.

Participants perceived that mixed feeding (breast and bottle) was acceptable and *normal* for infants. Some mothers reported that their families and/or service providers (including GPs, midwives, health visitors and nursery nurses) had advised them that they did not have enough milk for their infant and advised them that they needed to give their baby a bottle. Most mothers also perceived that they should not breastfeed in public, due to the stigma from media and society. Most mothers also reported that the media influences their family members' opinions, resulting in family members encouraging mothers to stop breastfeeding. These findings support research from Save the Children (2013) and UNICEF (2013). These findings also support the research by Mc Fadden et al (2016) and Save the Children (2013) research which reflects the negative impact from the \$70 billion dollar breast milk substitute market which undermines mother's ability to successfully breastfeed their babies in line with WHO and UNICEF advice (UNICEF 2017).

Complementary feeding practices were not in line with national or WHO guidelines, as many mothers interviewed reported that they had started to add other foods between three and four months, instead of the advised six months, blaming pressure from family members, food labels and the media as reasons for early complementary feeding, and that their child was hungry. Mother-in-laws were mentioned to be very influential and should be included in health promotion activities more. Many parents would welcome access to simple information on nutrition and infant feeding through their phones, but all mothers preferred to talk with health staff or trained volunteers, face to face rather than receiving leaflets. This supports the research from Victora et al (2016) and Black et al (2013) that peer support is the most effective intervention to support breastfeeding mothers.

Although the borough has good provision for Bengali (Sylheti) language speakers, other ethnic minorities reported finding language a major barrier to service access (especially Somalian, Chinese and Eastern European mothers). In such an ethnically diverse population innovative translation tools such as mobile translation tools may be useful to trial. Some specific groups seem to be more vulnerable such as those who do not speak English, those who are struggling financially, teenage mothers, single mothers and mothers who are afraid of using health services. Involving these groups more in planning services may help to ensure their unique challenges are addressed. However, the borough does provide translators for all languages with 48 hours' notice. Teenage mothers require ongoing support from the time they detect they are pregnant until at least two years after delivery, perhaps exploring how to modify present services to be more acceptable to this group could increase their utilisation of the services as discussed by Mezey et al (2017). Mothers reported the lack of crèche facilities at children centres was a barrier to attending health promotion sessions, perhaps more use of volunteers to run small creche services could be explored through young mothers or students who need community service placements.

The number of recent organisational changes and budget cuts has resulted in a lack of trust between some communities and service providers. Mothers reported long waiting times for appointments, lack of health and nutrition staff available to support mothers when they need it, and fear of being referred to social services as bad parents if they ask questions. The increase in health visitor numbers should help this but more use of the Tower Hamlets website and community conversations could help to rebuild this trust again. Mothers reported a higher level of trust for some voluntary community services and community midwives than for other service providers. This could be due NHS budget cuts and shortages of some key skilled cadres in the acute services.

Most key early years' service providers (health visitors, midwives and children centre staff) interviewed had attended the two-day UNICEF inspired Baby Feeding training sessions but there were still challenges to ensuring that women had support when they required it, especially at night. Identifying the key times where capacity is most stretched may help system planners to pilot effective responses; perhaps linking with a midwifery school could also be helpful, as student midwives need experience. However, peer counsellors are the most effective method (Black et al 2013, Victora 2016), a strategy which has been implemented in Tower Hamlets. More research among local mothers in the first six weeks postnatally may help to identify effective strategies, such as including mothers-in-law and husbands in community training sessions. Informing women during antenatal classes about the small physical size of the baby's stomach could help prevent some of the misperceptions about how much fluid an infant needs (Bergman 2013). Save the Children (2013), Keith (2015,2018) and UNICEF (2017) advise that there needs to be a societal support for breastfeeding to help overcome the barriers and increased political commitment to linking support to healthy feeding outcomes. More antenatal advice regarding the negative impact of mixed feeding and what affects lactation could help overcome misperceptions regarding milk supply (Keith 2018, 2017, 2015). The links between childhood obesity programmes should begin from delivery with mothers knowing that breastfeeding can reduce obesity, non-communicable diseases, allergies, diabetes and cancer in later life (Oakley et al 2016, Victoria et al 2016). Children who are breastfed are also less like to be fussy eaters, again helping to address a rising concern with mothers (Victoria et al 2016).

Placing the WHO infogram in plain view in antenatal and postnatal service areas along with the key reflexes and latching guidance may help midwives and mothers avoid the pain that comes from poor latching. It is also important for mothers to understand the correct process to make up bottle feeds and to ensure they are aware that bottle use should be halted by the age of one year in line with best practice guidance. The opportunities afforded by the five universal mandated health visitor checks (antenatal, new born and 6-8 weeks), plus the additional 3-4 month visit in Tower Hamlets, to provide healthy nutrition advice (including breastfeeding and healthy complementary feeding) should be maximised.

Although all service providers were trained in the Baby Feeding guidelines, not all staff were implementing them fully. Reasons given include workload and lack of prioritisation of exclusive breastfeeding as a key intervention by some staff. These factors are responsible for the mixed messages given to mothers and infants being given bottles postnatally on the wards. Perhaps adding implementation of these guidelines as key performance indicators could help improve implementation along with staffing levels being improved.

There was a lack of clarity on complementary feeding, what to give, and the use of artificial pacifiers. Many women have been advised that they could start to add other foods and drinks into the infant's diet '*when they are ready*' rather than supporting the WHO and UNICEF policy recommendation of six months. This advice, along with heavy marketing of baby foods, has resulted in mothers starting to add foods from 3-4 months into their infants' diets. Gilson (2016) states that for policies to be implemented and actions changed communities need to be more involved in the development and monitoring of the policies and plans. Buse, Mays and Walt (2012) also state that political leadership supported with resource allocation and training is essential for policies to be fully implemented.

After almost 4% of budget cuts, nutrition has remained a key priority in the borough. However, there were negative impacts reported from the budget reductions in relation to child services, health visitor and nutrition service capacity. Many of the challenges identified in the 2013 FIT research report, continue to challenge public health service providers (Rayment et al 2013).

These barriers include: women's perception that they do not have enough milk; lack of support to overcome barriers such as cracked or bleeding painful nipples, lack of sleep; mixed messages from health workers and family members on giving bottles; the need to return to work or household chores; no safe places to breastfeed the baby at work or in public (given the negative stigma attached to breastfeeding in public in the UK) (Rayment et al 2013, Keith et al 2017).

These challenges are also being faced by other boroughs who have not invested in infant and young child feeding support service yet (Keith 2018a) and could learn lessons from Tower Hamlet's experiences. To meet the national target of increasing exclusive breastfeeding to at least 50% by 2025, the whole society needs to invest more commitment into supporting mothers to exclusively breastfeed; communities need to be included in decision making, service delivery and evaluation; and families need to be included in awareness programmes on the importance of breastfeeding and ways to ensure mothers are successful in their attempts to give their children the best start in life (Keith 2018a).

When exploring the factors that relate to countries making progress in achieving improved nutrition outcomes, governance and leadership are key factors (Results UK, Concern Worldwide, University of Westminster 2015). In the Borough of Tower Hamlets all the steps advised by UNICEF to become accredited as Baby Friendly (UNICEF 1991) are being implemented. However, in relation to the four interventions set out by WHO in 2015, the borough needs to strengthen the integration and coordination of the public health support system. Many mothers report having to return to work before six months which makes implementing the national policy difficult for them; more support for working mothers should be explored.

Although the staff are all trained and breast milk substitutes are not officially promoted, the high number of women reporting children getting bottles in hospital is also not in line with WHO and UNICEF guidelines, and more work is needed to explore how to overcome these challenges (WHO 2015). Increased dialogue between service providers providing hospital, community, GP and early years' services could help at least once a year in informal settings. Clearly more resources are required but listening regularly to the service providers and the mothers can help to ensure that the limited resources are spent in most effective way (Keith 2003). When staff are involved in decision making, they are more likely to implement agreed plans and policies more effectively (Keith 2003, Blanchet, Keith & Shackleton 2006).

Limitations of the research include the subjective nature of qualitative research which is a window in time. When this research was being carried out a change process was underway in LBTH, which did lead to many service providers to feel fearful for the security of their positions which did affect the responses.

Conclusion

This research gives an in-depth picture of a window in time, which highlights the success of the London Borough of Tower Hamlet's 10-year investment into supporting mothers to exclusively breastfeed their infants. The borough still has challenges to overcome with the negative impact of the present resource constraints, resulting in capacity and access challenges. These resource constraints, combined with organisational change processes, have had a negative impact on staff morale and on services. Providing more integrated resources and nutrition service providers to support women at critical times such as postnatally, within first three days and when large numbers stop exclusively breastfeeding at around 3 – 6 weeks, could help maintain the borough's higher exclusive breastfeeding rates. Increasing exclusive breastfeeding to six months

could also help to reduce childhood obesity and non-communicable disease rates in the borough (Keith 2015, Keith et al 2017, WHO 2018, Lancet 2018).

These findings (themes) were then presented to early years' service providers, at a workshop, using an amended framework of five of the six WHO health system building blocks (WHO, 2000): health information (communication), service delivery (access and trust), human resources (capacity and accountability for policy adherence), financing (resource reduction) and governance and leadership (integration, role clarity and nutrition referrals). At this workshop there were 63 participants, including key informants and the research team. The health systems framework was selected to support the service providers to consider system issues they could address. Recommendations from the workshop were integrated into the report. A draft report was presented to the LBTH public health team in July 2017. Following their comments, a final report was presented in October 2017. The report fed into public health priority setting for the borough; several recommendations were agreed by the council, including the continued funding of the baby feeding service and increased nutrition resources and support across early years' services.

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