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Infant Feeding Choices and Experiences for Women with Pre-existing Diabetes: Facilitating or Forcing Breastfeeding

Elizabeth Stenhouse[1, *], Nicole Stephen[2], Gayle Letherby[3]

[1]School of Nursing and Midwifery, Faculty of Health and Human Sciences, Plymouth University, Plymouth, UK
[2]Hamilton Health Sciences, Burlington, Canada
[3]School of Health Professions, Faculty of Health and Human Sciences, Plymouth University, Plymouth, UK

Email address

elizabethstenhouse29@gmail.com (E. Stenhouse), nicole.stephen2126@googlemail.com (N. Stephen), gayle.letherby@plymouth.ac.uk (G. Letherby)
[*]Corresponding author

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Abstract

The project objectives were to explore the infant feeding choices made by women with pre-exiting diabetes and the support they received from midwives and healthcare professionals. The research design was qualitative. We conducted six single interviews with pregnant women, five dyad interviews: three with pregnant women and mother and two with pregnant women and male partner, one four-way interview: one pregnant woman with mother, father and male partner. The study was conducted in the South West of England UK in a large district general hospital with approximately 5,000 births per year with approximately 85 (1.7%) complicated by pre-existing Type Diabetes and Type 2 Diabetes Mellitus. Twelve women plus four of their mothers, three partners and one father (20 respondents in all) were recruited by clinicians. A convenience sampling procedure was used respondents consisted of 12 pregnant women with Type Diabetes and Type 2 Diabetes Mellitus. The findings showed that for some women, the decision to breastfeed was made with regard to medical benefits for herself and her infant and with reference to practicalities. The decision to formula feed often reflected concerns for bodily comfort and preference. Some women expressed feeling pressure to breastfeed from family and friends and/or from midwives and healthcare professionals. All respondents reported a lack of information and support in their infant feeding choices. They said that the main focus from midwives, healthcare professionals, family and friends was on their diabetes management during pregnancy with limited support in relation to infant feeding choices. In conclusion the experience of infant feeding is complex and often distressing for mothers and their families. Midwives and healthcare professionals need to provide women with pregnancies complicated by diabetes the information and support they need when making infant feeding choice and feeding their babies.

1. Introduction

Breastfeeding is a major public health issue as it affects the health of both the mother and her infant(s) in the short and long term. Mothers are encouraged to exclusively breastfeed their infants for the first six months and continue breastfeeding up to two years of age [1]. Extensive research documents the diverse and compelling maternal, infant, societal, economic and environmental advantages for breastfeeding or giving infants' human breast milk [2]. For the mother benefits include decreased bleeding post-birth, quicker return to pre-birth weight, increased bone density, prevention of osteoporosis and decreased risk of breast and ovarian cancer [3]. For the infant, there is a decreased incidence of infectious diseases, of sudden infant death syndrome, of lymphoma and leukaemia and enhanced performance on tests of cognitive development [2]. For women living with diabetes and their offspring additional benefits have been identified. These include: better maternal glycaemic control [4] a reduction in the insulin required [5] improvement in the cholesterol profile [6] and a shorter time to return to pre-birth weight which is more important for women with type 2 diabetes mellitus (T2DM) as there is a higher incidence of obesity for this cohort [3]. It has also been suggested that exposure to cows' milk in infancy may initiate an immune response that precedes the development of type 1 diabetes mellitus (T1DM) [7, 8, 9] and infant nutrition has long been recognised as a risk factor for the development of T2DM in later life [10, 11]. However, infants of mothers with T1DM, T2DM and Gestational Diabetes Mellitus (GDM) are at increased risk of developing neonatal hypoglycaemia due to fetal hyperinsuliaemia in response to maternal hyperglycaemia in pregnancy that continues post birth [12]. To prevent neonatal hypoglycaemia occurring the Confidential Enquiry into Maternal and Child Health (CMACE) report recommends that mothers with diabetes should breastfeed as soon after birth as practicable [13, 14]. A study of infants of mothers with GDM showed those that had breast fed in the delivery room had a lower incidence of hypoglycaemia than those fed with formula [15].

Anecdotal and clinical experience (author 1) suggests that healthcare professionals sometimes hinder the mother's ability to breastfeed as their own fears regarding neonatal hypoglycaemia leads to supplementing feeds with formula milk. An unpublished local audit of the use of complementary formula feeding in breastfed infants born to mothers with diabetes showed 98% of infants received at least one formula feed [16]. Research suggests that women with diabetes are more likely to attempt breastfeeding [17, 18] but give up quicker [19, 20]. It was found [21] that that women diagnosed with GDM in pregnancy that have made the decision to breastfeed anticipated failure with breastfeeding and were accepting of this failure.

Midwives give individualized care to women and their role is to support women in their infant feeding choices. However, the promotion of breastfeeding (alongside the general care and support of a woman through her pregnancy and birthing journey) is a key aspect of the midwife role with women been given information and advice related to the benefits of breast feeding in the antenatal period and post birth. A consideration of infant feeding from a wider sociological and feminist perspective and an exploration of empirical research on infant feeding suggests that a more complex analysis is needed of both the lived experience of breastfeeding and the promotion of it [22, 23, 24]. With reference to the breastfeeding experience of women with pre-existing diabetes there have been studies that demonstrate that these women may experience particular difficulties in initiating and establishing breastfeeding. It is thought that fluctuating maternal glucose levels experienced by mother's following birth delays lactogenesis as lactose levels are lower with the consequence of a reduction in milk volume [25, 26]. Other studies suggest that this cohort tend to feed for shorter duration than the general population; which may be due to the increase maternal and infant morbidity known barriers to breastfeeding [27, 28, 29]. Furthermore, social networks and societal influences effect all women's infant feeding choices and for various reasons including the desire for paternal involvement in feeding, the belief that formula feeding is more convenient, the ability to quantify formula feeds, difficulty of managing paid work and breastfeeding and dislike of breastfeeding in public all mitigate against breastfeeding as a positive choice [30, 31, 32, 17, 33].

It has been established that pregnancy and childbirth has an emotional impact on parents and on the midwives who support them, Additionally, part of the role of the midwife is to provide emotional support to women and their families [34, 35, 36, 37]. In relation to breastfeeding research indicates that women need emotional support alongside information and practical support [38, 24]. Research suggests that midwives need to reflect on their own views, feelings and experiences towards infant feeding as this influences the care they give [39]. Research [40] argues that breastfeeding is a 'highly charged emotional experience' for midwives whether they are mothers or not.

Women with pre-existing diabetes already find the simultaneous management of diabetes and pregnancy a challenge to their wellbeing, in that they often feel more like a woman living with diabetes than a pregnant woman [41, 42]. Thus, it is essential to consider what knowledge and support women need in order to ensure both physical health (of mother and infant) and also psychological wellbeing in terms of positive self-identity. For women with pregnancies complicated by diabetes midwives place a greater emphasis on managing their diabetes in relation to infant feeding as breastfeeding can affect management of their diabetes. For example the focus is on liable blood glucose levels, insulin adjustments and increased carbohydrate intake and less on the emotional needs of the mother [42]. To date there has been limited qualitative research exploring infant feeding choices and the lived experience of breastfeeding for women whose pregnancy is complicated by diabetes. We report here

the findings from a study that explored the daughter/significant familial other (i.e. mother, partner, father) relationships when the pregnancy is complicated by diabetes and issues related to infant feeding, in particular breastfeeding.

The study was exploratory in nature and our aims were to consider what support pregnant women with pre-existing diabetes felt they needed and what support they received from their mothers and significant others. An additional key theme to emerge from the data was the support, encouragement and pressure women did or did not receive from healthcare professionals. Here we focus on the support or not women received with specific reference to infant feeding choices and experiences.

2. Methods

The study was conducted in the South West of England UK in a large district general hospital with approximately 5,000 births per year with approximately 85 (1.7%) complicated by pre-existing diabetes (T1DM and T2DM). The study was approved by the Cornwall and Plymouth Ethics Committee. Women with pregnancies complicated by diabetes receive their antenatal care within the hospital diabetic antenatal clinic run by clinicians with clinical expertise in caring for women with pregnancies complicated by diabetes.

Twelve women (plus four mothers, three partners and one father) were recruited by clinicians. A convenience sampling procedure was used respondents consisted of 12 pregnant women with T1DM and T2DM. Characteristics of the respondents are described in Table 1. To ensure confidentiality pseudonyms have been used. The study was granted ethical approval from the Plymouth and Cornwall Ethics Committee. The ethical guidelines of the British Sociological Association [43] and the principles of good clinical practice as outlined in the EU Directive 2001/20/EC, article 1, clause 2 [44] were followed at all times. Following informed consent semi-structured interviews were conducted over a period of six months. Respondents were interviewed once by the same interviewer and issues covered include demographic information, history of diabetes, and history of familial relationships in relation to the diabetes, previous pregnancy experiences, and infant feeding choices. Interviews were conducted at a time and place of the respondent's choice. Interview duration ranged from 30 minutes to one hour in length. One-to-one and dyad/group interviewing allowing us to explore issues in greater depth than would be possible with larger groups and the semi-structured focus of the interviews enabled a flexible format with respondents able to influence the direction of the research and focus on issues of importance to them [45, 46]. Although we only intended to interview mothers and daughters when women wanted their partners and fathers to be included we included them too.

Table 1. *Respondent and Interview Details.*

Name	Age	Type of Interview	Type of Diabetes	Duration of diabetes in years	Number of previous pregnancies	Trimester of pregnancy	Relationship status
Tanya	29	Dyad (with mother)	T1DM	10	1	1	Married
Emily	27	Dyad (with partner)	T1DM	12	1	1	Male Partnered
Claire	28	Dyad (with mother)	T2DM	2	0	1	Male Partnered
Geraldine	33	Group (with partner, mother and father)	T1DM	18	0	1	Married
Amy	28	Single	T1DM	6	1	2	Male Partnered
Sarah	33	Single	T1DM	24	2	2	Married
Bet	38	Single	T2DM	17	4	2	Separated
Soebia	39	Single	T2DM	3	0	2	Male Partnered
Charlotte	20	Single	T1DM	9	1	2	Male Partnered
Regina	32	Dyad (with partner)	T1DM	30	0	3	Male partnered
Patricia	40	Single	T2DM	8	4	3	Married
Ashleigh	18	Dyad (with mother)	T1DM	2	0	3	Male Partnered

We conducted six single interviews with pregnant women, five dyad interviews: three with pregnant women and mother and two with pregnant women and male partner, one four way interview: one pregnant woman with mother, father and male partner.

Interviews were digitally-recorded and transcribed verbatim with on-going analysis grounded in the experience of respondents and our aim was to be faithful to respondents' accounts [47]. All members of the research team read the transcriptions independently. From these readings it was clear that data saturation had been achieved. Each research team member identified themes and topics and these were discussed and debated until consensus was achieved. Although our findings may not be generalisable to the experience of all pregnant women with pre-pregnancy diagnosis of diabetes it is likely that the experiences reflected here will have meaning for others in similar situations [48].

3. Findings

The findings presented here draw only on the pregnant women respondents and focus on one theme from the data; that of choices related to infant feeding and experiences of feeding their infants, in particular breastfeeding. Pregnant women respondents were asked about their feeding intentions and experiences of infant feeding with the questions phrased as not to imply breastfeeding was the preferred method. However, in analysing the data, we reflect that at times they

may have perceived a judgemental attitude. We suggest that this is not surprising given that, as our data, along with that of others [33] for a review of 17 qualitative studies) suggests, in relation to this issue, they feel judged much of the time.

Facilitating or Not

Of the 12 women six intended to breastfeed, four intended to formula feed and two were undecided. Decisions to breastfeed were related to convenience and to medical benefits. The following was typical:

I think it is preference, everything is preference, isn't it?... breast for me is easier because I haven't gotta mix bottles that way, you know what I mean, it's on tap isn't it? (Bet).

I want to try breastfeeding. That's something that I've got very strong principles about, because I know, not only does it like, help with the baby's immune system, it helps with the bond between mother and baby as well... I think it's something you should try... so... the baby's got that – all the stuff that it needs and that (Claire).

The choice to formula feed was generally related to perceived maternal bodily comfort. For example Sarah said:

I'm just not breastfeeding, I can't just sort of the baby sucking on the... I just can't, it's just not me (Sarah).

Thus, in support of other research, we found that for some breastfeeding was perceived, or had indeed previously been a negative experience [33, 49]. In other studies an infants' inability to latch on or to feed properly is identified as a barrier to successful breastfeeding [33]. Rather than noting her previous child's inability to feed Amy claimed she was unsuccessful because of his dislike of breastfeeding/milk:

I tried breastfeeding with my son and I didn't like it, he didn't like it and I didn't like it, I'm not gonna put myself through that this time... straight on the bottle (Amy).

Only Charlotte and Ashleigh were undecided about how to feed their infants. In both cases their pre-existing diabetes was an issue. Both women wanted to attempt breastfeeding but were unsure of their ability to because of their diabetes or other complications. Ashleigh said:

We just haven't made a decision because they said that they're gonna have to put a palette [infant diagnosed antenatally with cleft palette] in... so she might have to be fed through a tube first (Ashleigh).

Despite their intentions to breastfeed previous babies two women had been frustrated in their wishes. Tanya reported that she was encouraged to discontinue breastfeeding due to her diabetes. She said:

With my first baby the doctors pressed me to stop breastfeeding so that I could start some medication. This time I will keep breastfeeding no matter what the doctors say.

Whereas Emily spoke of her previous baby's time in the special care baby unit as the barrier to breastfeeding:

I'm sorry, I didn't actually breastfeed, I tried to breastfeed and she wouldn't latch on because she was in intensive care for three days... They gave her a bottle so she got lazy.

Burns et al [33] (2010) note that complaints of health professional's lack of time to both educate and support women in their infant feeding choices was a recurring theme in the studies they reviewed. In our study it appeared that the women's status as an individual with pre-existing diabetes was often an issue. When asked about the information and support they had been given related to infant feeding respondents said that information was limited in this and other areas [42] as the emphasis of support from both healthcare professionals was always on their diabetes management. Geraldine said:

I have had absolutely nothing... I'm hoping it will work, but you know, you never know... [no advice from health professionals] I think it's just a little bit early.

This is unfortunate for as Emily said:

They all recommended it, because we were concerned is it alright to breastfeed in diabetics, because you don't know do you, you know.... they said 'yep, diabetic women are fine to breastfeed obviously, just keep an eye on your blood sugars...'

Furthermore, although family members were generally very supportive during pregnancy, birth and early motherhood their dominant concern was also always the management of the diabetes [42].

The prevalence of pre-existing diabetes clearly adds a dimension to the lived experience of breastfeeding. Other studies have highlighted the differences between the embodied experience of breastfeeding as opposed to the theory. Obviously lack of time for support is significant for all women [49] but the lack of expert support is arguably more significant for this group. Lack of support coupled with the conflicting advice that pregnant women/new mothers with pre-existing diabetes sometimes receive adds to a woman's frustration and distress negatively impacting on her and her baby(s) infant feeding experiences and on their general health and well-being.

Feeling Forced

If lack of clear, consistent information and expert support is bad for the infant feeding experience and more generally, pressure to feed one's baby in a way that makes a woman feel uncomfortable is worse. The respondents in our study who spoke of this kind of pressure were clearly very distressed. Sarah and Soebia spoke of the pressure they were experiencing from family and friends:

My cousin's just had a baby and she's like 'ohh you've gotta try it, at least try it' and I'm like 'I'm not even trying it, don't even go there, because I'm not entertaining it' I know it's best for the baby, I know it, I've read it all, I've heard it all but no I'm not doing it (Sarah).

...having seen some friends that have had babies, tried breastfeeding, and seen the demands on them physically and mentally, and emotionally, I just, cannot bear the thought of going through that..... Mark's mum said to me 'I wouldn't knock it until you try it' which is probably a sensible comment... And I thought 'I don't even wanna try it', in fact, that's how big a deal this is to me – I don't want to get the baby used to breastfeeding, I don't want to do it, I feel really passionate about it, it's really bizarre, I guess I'm not much of an earth mother... (Soebia)

Soebia continued to talk about the similar pressure from healthcare professionals:

I've heard a few friends of mine who started breastfeeding and then wanted to stop were put under tremendous amounts of pressure by their midwife, they had like bleeding nipples and in absolutely agony, but they were told to carry on, keep doing it…… And I know that when I speak to Sue [midwife] I'm gonna have to tell her at some point... but I'm absolutely dreading it because I know everywhere you read it says – this is the right... and I wanna be able to say to the midwife 'I've made a decision, I don't want to breastfeed' and I don't want to have an argument with her about it, or debate. I would like her to say 'are you sure?' and I'd say 'yes' and that's the end of it. But I'm expecting more than that… (Soebia).

These respondents clearly feel that they have to justify their choices contrary to the dominant 'breast is best' discourse. They do not challenge the benefits of breastfeeding but are clear on their decision and anxious about their need to defend this to familial and professional others. Likely this is because acceptance of the messages that breastfeeding is best leads to defensiveness, guilt and shame [50, 33, 49, 24, 51]. For pregnant women and new mothers with pre-existing diabetes this is ironic given the 'mixed messages' noted above.

4. Discussion

As noted above the intension to breastfeed in women with pregnancies complicated by diabetes has been shown to be higher than those of the general population but exclusivity and duration of breastfeeding is shorter especially in women with T1 and T2DM. As the number of pregnancies complicated by diabetes, in particular T2DM [52] increases medical evidence would suggest that issues surrounding increasing the initiation and continuation rates and exclusivity of breastfeeding needs to be addressed. From the study reported on here it can be seen that women with diabetes report the medically identified general and diabetic specific benefits of breastfeeding yet some still chose to formula feed their infants. Previous research and writing on infant feeding and infant feeding choices provides a complex and sometimes contradictory message. Whilst 'breast is best' reflects scientific evidence about maternal and infant health this message also has ideological overtones and at times socially negative consequences [53, 22, 33].

Although women who breastfeed are seen to be 'doing what is best' for their baby(ies) at the same time they need to be careful not to transgress other norms and expectations. This has implications for women's choices and experiences of breast and formula feeding and women's feelings of self-worth with reference to motherhood. If 'breast is best', formula is second best and by association mothers who successfully breast feed are better mothers than those who do not. With this in mind breastfeeding has been argued by some to be symbolic of both womanliness and good motherhood and representative of an era that 'demands' intensive mothering/parenting [22, 53, 54, 33, 55]. This is reflected in our study where women felt pressured to breastfeed their infants from both family and friends and healthcare professionals. This raises the issues that women may need the support of healthcare professionals not only in the decision to breastfeed but also in the decision to formula feed. A systematic review [56] highlights that inadequate information and support is given to women who have made the decision to formula feed and women frequently feel guilty about their choices.

Alternatively, research by [57] suggests that women sometimes choose to breastfeed against the wishes of their immediate family and in these cases they sometimes have to seek out 'allies' (including healthcare professionals and peers and family members who are/have breastfed) to support their decision and experience. This suggests that women are subjected to a diverse set of values across their social networks [57, 58] which can add to their anxiety when making infant feeding choices and when feeding their babies.

Women living with diabetes may have co-morbidities or diabetes related complications which have the potential to influence their decision to breastfeed. It is of note that several women in our study commented upon the lack of information or support from healthcare professionals about the importance of breastfeeding their infants and post birth they received conflicting advice from practitioners especially if the infant had neonatal hypoglycaemic. The numbers in our study were small and all except one of our respondents were Caucasian (reflecting the demographics of the area), yet we suggest that this study highlights important issues that need to be addressed in clinical practice. For example the need for midwives and healthcare professionals caring for women with diabetes to consider:

- their own attitudes, values and opinions in relation to breastfeeding and
- the emotional wellbeing and positive self-identity of the women in their care (with specific reference to the implications of the 'breast is best' discourse both for women who want and do not want to breastfeed.

Furthermore, the management of the mother's diabetes and the consequential effect this may have on the neonate is important but should not be the sole focus of care.

In our study, as in [17], a majority of pregnant women respondents intended to breastfeed their infants. This highlights the need for all healthcare professionals caring for women with diabetes to give women the information and support they need when and if they make this decision. Women should be given the opportunity to discuss their feeding intensions with healthcare professionals and there is a need for the association between feeding methods in pregnant women with T1 and T2DM to be further explored using approaches designed to tackle low exclusivity and early discontinuation breastfeeding rates.

The illness careers of women with T1 and T2DM who go on to mother are distinct and complex [59] and research that examines the social support required to empower women and their families to optimise their positive pregnancy outcomes including positive feeding experiences is limited. Studies by [40, 60] found that midwives felt saddened and despondent when they could not convince a woman of the benefits of

breastfeeding. Yet, our research suggests that women with pre-existing diabetes feel they do not receive sufficient antenatal information regarding feeding choices, nor sufficient support to enable them to breastfeed and feel anxious and defensive about their choices. This suggests that although 20 years ago research highlighted a lack of information for women with diabetes who intend to breastfeed [61] lack of appropriate knowledge and support is still a problem, at least for some.

The reasons why women choose to feed their infant with formula feed has received little attention and as [52] and [62, 63, 64] argue some healthcare professionals have the mistaken belief that initiatives like Baby Friendly Initiative (BFI) prohibit supporting women in their decision to formula feed their Infants. Yet, as BFI stated in 2009 (relevant in terms of the data collection period):

The role of the Baby Friendly Initiative and of health professionals is to give pregnant women and new parents the full facts about infant feeding based on the best available evidence in an objective and non-judgemental manner in order to allow informed decision making. We then need to help mothers to make decisions appropriate to their circumstances and to support them in their decision *whatever that may be*. [65]

5. Conclusions, Implications for Practice and Further Research Needs

Overall the data suggests that for women with pre-existing diabetes infant feeding is particularly complex and that if this complexity is not acknowledged by those who support women additional distress is likely. Our research suggests that midwives and other healthcare professionals need training to better understand the information and support pregnant women (including those with pre-existing diabetes) may need from them in terms of infant feeding choices and experiences. Further research focusing on mothers' knowledge of infant feeding and how this influences their initial feeding choices is required. Midwives' and other healthcare professionals' knowledge of infant feeding in relation to the infant of a mother with diabetes is essential to provide pregnant women living with diabetes with the information to make informed choices. It is important that women get this support, and it is imperative, as BFI (2009, 2012) insists that all women are supported in their infant feeding experiences irrespective of their infant feeding choices. If not, as our study indicates, women's emotional wellbeing will likely be negatively affected, as will their positive sense of self.

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