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Breastfeeding Support and Opiate Dependence: A Think Aloud Study

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Abstract

Objective

International guidelines recommend the promotion and, protection of breastfeeding for the substance exposed mother and baby. Yet few studies have explored the facilitators, moderators and barriers, to successful breastfeeding for women enrolled on opiate maintenance, treatment, or suggested targeted support strategies. The aim of this, study was to explore the views of women with opiate dependence on, proposed elements for inclusion in a breastfeeding support intervention. Design: a qualitative study using think aloud technique. Setting: tertiary maternity hospital in the North-East of Scotland. Interviews conducted between November 2013 and March 2014. Participants: 6 opiate dependent women within 6 months of giving birth. Participants were enrolled on opiate medication treatment during their pregnancy, had initiated breastfeeding and accessed in-hospital breastfeeding support.

Findings

an intervention founded on practical, informational and environmental elements was endorsed as supportive of continued breastfeeding of an infant at risk of Neonatal Abstinence Syndrome. Opiate dependent women were more receptive to strategies promoting a person-centered approach that were specific to their individualized infant feeding needs and delivered within an emotionally supportive environment. Barriers to the acceptability of breastfeeding advice included discouraging, prescriptive and judgemental healthcare actions and attitudes.

Key Conclusions

there are distinct facilitators, modifiers and barriers to breastfeeding within the context of opiate exposure. Using this awareness to underpin the key features of the design should enhance maternal receptiveness, acceptability and usability of the support intervention. Implications for Practice:

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additional and tailored support interventions are required to meet the specific needs of breastfeeding an infant experiencing opiate withdrawal. The elimination of disempowering institutional actions and attitudes is imperative if a conducive environment in which opiate dependent women feel supported is to be achieved.

Keywords: 'Opiate dependence'; 'substance use'; 'breastfeeding support'; 'healthcare intervention'; 'think aloud technique'; 'Neonatal Abstinence, Syndrome'.

INTRODUCTION

The health, social and psychological value of breastfeeding is well-evidenced in healthcare literature and breastmilk is universally accepted as the optimum nutrition for infants (Renfrew *et al.* 2012). For the opiate exposed mother and baby there are additional advantages to be gained from breastfeeding over and above the generic benefits (Tsai and Doan, 2016). Yet statistics demonstrate that this is a population with significantly lower rates of breastfeeding initiation and continuation compared to national averages (McAndrew *et al.* 2012; Wachman *et al.* 2010). Reviews of clinical practice also reveal that within health services promotion and support for breastfeeding amongst women prescribed Opiate Maintenance Therapy (OMT) can be sub-optimal (Balain and Johnson, 2014; O'Grady *et al.* 2009).

Research indicates that breastfeeding is beneficial for the substance exposed mother and baby as it alleviates the severity of Neonatal Abstinence Syndrome (NAS); optimises opportunities for bonding; enhances parenting skills by limiting separation and may decrease maternal anxiety levels through the reductive effect of oxytocin on stress responses (Jambert-Gray *et al.* 2009; Jansson *et al.* 2008). Substantial evidence demonstrates that there is a lower incidence of NAS with the provision of breast milk containing opiate substitution medication (Logan *et al.* 2013). Breastfed infants experience a shorter duration and milder course of withdrawal symptoms than their formula fed counterparts (Welle-Strand *et al.* 2013). They are also less likely to either require pharmacological treatment for NAS or they have a shorter course of treatment (Abdel-Latif *et al.* 2006). Additionally, neonates managed with supportive care -a tripartite package of breastfeeding; environmental modifications to minimise external stimuli from light, noise and activity and consolation strategies such as non-nutritive sucking and loose swaddling to aid self-soothing- have on average a shorter duration of hospitalisation compared to those undergoing pharmacological management (Dryden *et al.* 2009; Patrick *et al.* 2012). This body of evidence serves to substantiate the significant advantages in respect of improved health outcomes and the potential rationalisation of finite healthcare resources offered by increased breastfeeding in this cohort. Furthermore, included in a number of the studies is the recommendation that health services should be directed towards facilitating breastfeeding for the opiate

dependent women and baby. They do not, however, offer suggestions as to how this can be achieved.

Various reasons have been forwarded for the limited breastfeeding success amongst substance dependent women. These range from negative attitudes towards breastfeeding and the prevailing socio-cultural norm of formula feeding within many disadvantaged communities, to a lack of information on the additional benefits of breastfeeding on NAS outcomes (Jones and Fielder, 2015). Barriers suggested for the premature discontinuation of breastfeeding include the physical feeding difficulties inherent of neonatal withdrawal; low maternal self-confidence and unsupportive institutional practices (Jansson and Velez, 2015).

Whilst this gives valuable insight into the suspected challenges to breastfeeding for this group, there is limited research on the views of OMT women themselves, regarding the facilitators, modifiers and barriers which inform their breastfeeding decisions. Demirci *et al.* (2015) conducted interviews with pregnant OMT women exploring breastfeeding initiation and further focus groups with 4 postpartum mothers on their breastfeeding experience. The findings reported a perceived lack of support from hospital based clinicians, misinformation and undermining practices regarding breastfeeding support and management. Tsai and Doan (2016) systematically reviewed the literature on infant feeding and opiate dependence and identified a need for qualitative studies to explore maternal views in order to develop appropriate breastfeeding promotional and support interventions. The lack of qualitative evidence may be reflective of the status of this group as hard to access and reluctant engagers of research. Several authors have encountered difficulties recruiting and retaining participants from the substance dependent population. Chaotic lifestyles, illiteracy and limited concentration have all been cited as negatively impacting on the suitability of traditional research methods to accommodate these barriers (Chandler *et al.* 2013; Murphy and Rossenbaum, 1999). The use of illicit and prescription addictive substances is a major public health issue and is considered to have reached epidemic proportions (Allegaert and van den Anker, 2016). Davies *et al.* (2015) conducted a cross-country comparison of the prevalence of NAS in England, USA, Australia and Canada and a growing trend was noted in the number of infants at risk of neonatal withdrawal. The UK demographic data revealed that substance exposed infants were born to women with an age range of 25-34 and who were mainly resident in areas of high deprivation. This points to a group who are highly likely to already be subject to health and social inequality and would benefit from the protective properties of breastfeeding.

Yet, in order to develop and improve services, it is imperative to gain an authentic understanding of the needs of the target group. This study used Ericsson and Simon's (1992) think aloud technique as a method of addressing the complexities of research

with OMT mothers. This technique involves short, focussed sessions using models or examples of potential intervention elements. Think aloud promotes a person-based approach by canvassing the perspective of those with personal experience of a phenomenon and the benefit of their understanding can be incorporated into the development process. Subsequently, this approach has gained credence within healthcare research as accommodating user's views prior to pilot testing can optimise efficacy, acceptability and minimise time and resource expenditure (Hoddinott, 2015; Yardley *et al.* 2015). Specifically, for this population group, the process enables respondents to express their thoughts in a fragmented manner which avoids the need for social verbalisation. Thus, it is an ideal medium to overcome issues with illiteracy, articulation or memory impairment (Koro-Ljungberg *et al.* 2012). In our study the participants were prompted to consider their breastfeeding experience and support needs whilst they engaged with pictorial representation of intervention components or concepts. They were encouraged to verbalise their thoughts, or 'think aloud' about the functionality of the components to support breastfeeding. Thus, whilst the use of think aloud technique has not been used with this study population before, to the author's knowledge, it was considered as an approach sensitive to their unique needs and the method has been successfully used to study decision making in previous healthcare research (Briscoe *et al.* 2015; Lundgren-Laine and Salanterä, 2010).

Within the plethora of breastfeeding literature, the studies concerned with infant feeding and substance dependence predominantly focus on the impact of neonatal withdrawal outcomes. There is a conspicuous lack of research exploring the breastfeeding experiences of OMT mothers or determining ways in which to facilitate this group achieve their infant feeding goals (Kelly *et al.* 2016). Given the significant health and social advantages of breastfeeding for this group there is a compelling need to undertake research which may aid practitioners and policy holders to both develop and deliver targeted support strategies. In this paper we report on think aloud sessions undertaken as part of a mixed method feasibility study to inform, design and test a theoretical and evidence based breastfeeding support intervention. The focus of this phase was to explore the views of opioid dependent women on the acceptability and usability of the prospective intervention.

METHODS

Procedures

the feasibility study adopted a pragmatic approach with a mixed methods design including qualitative think aloud sessions. This technique used pictorial representations of intervention elements as prompts symbolised practical assistance; one-to-one

dedicated sessions; emotional support; person-centred care and environmental modifications and consolation equipment (Table 1). The choice of intervention components was informed by a systematic review of existing literature (MacVicar and Kirkpatrick, 2014); recommendations from local stakeholders and international good practice guidelines for the care of infants at risk of NAS (World Health Organisation, 2014).

Setting and Participants

The research was conducted in the main regional tertiary level maternity hospital. The facility provides a combined obstetric and substance misuse clinic and specialist neonatal services and has an estimated 100 admissions per annum of women enrolled on OMT (Black *et al.* 2013). Criteria for participation were women within 6 months' post birth; opiate maintained during pregnancy; initiated breastfeeding; roomed-in with their baby in the postnatal area; spoke English language and were 16 years of age or over. Exclusion criteria were known concurrent use of psychoactive drugs as this can result in physical/psychological or pharmaceutical impairment affecting ability to fully comprehend informed consent. Potential candidates were identified by their hospital direct care team, who acted as gatekeepers. The gatekeeper made initial contact with the women and those who expressed an interest were provided with study information leaflets. Prospective candidates met with the researcher to discuss the study and if the woman agreed to participate, written informed consent was obtained.

Ethical Considerations

Ethical approval for the study was obtained from the appropriate University and NHS Ethics Committees. Prospective participants were informed that the quality of their care and that of their baby would not be affected by their choice to participate, or not, in the study. All data were subject to procedures to ensure anonymity, confidentiality and stored securely.

Data collection

Data collection included maternal and neonatal socio-demographic characteristics, obstetric outcomes and infant feeding status. These were provided verbally by the mother or retrieved from nursing documentation. Data were collected by the first author SM, who was not connected with the participant's care. The participants were orientated to the think aloud technique with an example exercise before pictorial representations of proposed intervention elements were introduced. They were encouraged to consider their experience of and recommendations for breastfeeding support and verbalise these thoughts out loud. The duration of the sessions ranged between 40 – 60 minutes and the

data consisted of contextual notes, maternal comments and the associated pictorial representations.

Data analysis

The data were initially analysed using a stepwise approach particular to the think aloud technique (Ericsson and Simon, 1992). Step 1: the data collected were either defined as stand-alone verbal reports if there was sufficient context to directly interpret their meaning, or they were considered in relation to the associated picture and their meaning guided by this relationship. Step 2: the verbal reports were assigned to a category or sub-category guided by the proposed *a priori* intervention components (as detailed in Table 1). Step 3: categories were added to the *a priori* elements, as additional facilitators, modifiers and barriers of breastfeeding support emerged from the verbal reports. The complete mixed methods dataset, which included the think aloud data, were subsequently integrated via framework analysis according to their similarity of meaning in respect of intervention design elements and recommendations to support breastfeeding (O’Cathain et al, 2010; Srivastava and Thompson 2009).

Research rigour included ongoing discussion between the authors of the emergent themes, to reach a consensus agreement of the appropriate categories and sub-categories. In addition, data availability and an audible decision trail can verify the robustness of the research process (MacVicar, 2016).

FINDINGS

Seven women were referred by the gatekeepers, of which six consented to participate in the study. The participants ranged from being 3 days to 6 months’ post birth of a singleton pregnancy when the interviews were conducted. All of the participants were classed as belonging to socio-economic disadvantaged groups and were White British. Participant age ranged from 19 to 36 years; 4 were paragravidum and 2 were first time mothers. All of the women were engaged with substance misuse services prior to pregnancy and 5 were maintained on methadone and 1 prescribed buprenorphine. There were noted variations between the previous breastfeeding experiences of the group (Table 2 and 3 summarise maternal and neonatal demographics and outcomes).

There was variability in the degree to which participants accepted the concept of the think aloud technique. Four mothers either fully or partially engaged with the process and reproduced verbal fragments whilst the remaining two women adopted a more traditional interview style and gave a narrative account of their breastfeeding experience. Contradictory views were expressed regarding the relevance of, and need for, some components. Additionally, some participants discussed certain aspects of

breastfeeding support in connection with one picture whilst others raised a similar point associated with a different picture. While this reflects the uniqueness of each mother's infant feeding journey, and indeed the ideals of qualitative research, there were pivotal themes which resonated with all respondents.

Five key themes emerged from the data. These were the need for women to acquire breastfeeding practical skills; availability of accurate and accessible information; importance of emotional support; an individualized approach to support provision and a modified environment to enable control of external stimuli and resourced to provide consolation therapy.

Practical Skills

All participants considered assistance to acquire the practical skills of breastfeeding as an essential intervention element. Opinions varied between respondents as to the degree of support necessary and this appeared to be dependent on their previous breastfeeding experience. Facilitating technical expertise was particularly important for those who had not breastfed before, as confirmed by this participant:

"Being a first time mum it would have been useful to have help"
(#1)

Those who had previously successfully breastfed demonstrated a greater level of self-belief in their ability to negotiate feeding challenges. One mother identified this as the reason for her level of confidence and, subsequently, felt that practical assistance was not a major support requirement:

"Didn't need help, fed my others"
(#2)

Alternatively, whilst one participant expressed confidence in her breastfeeding ability, she reported that she would have welcomed the provision of a support worker as a precautionary measure:

"Would have been handy to have someone, you know, just in case?"
(#3)

Most of the respondents felt that additional assistance would be a positive contribution to the existing service. This was associated with perceptions of lack of staff as the participants reported that their decision to ask for help was conditional on how busy the health care professionals appeared. Practitioner time constraints were considered detrimental to supportive practices with one mother succinctly describing the overriding concern as:

"not to have them rush off"
(#4)

Information Provision

Information specific to substance dependence was considered a prerequisite to supporting breastfeeding continuation. Yet, there was a noted reluctance amongst ward staff to discuss substance misuse, with queries redirected to other professional groups. The majority of participants reported that they wanted and needed information relating to opiate exposure and the implications for their baby:

"No-one tells you about the effects of the meth (methadone)."
(#4)

Many of the participants were unaware of the course of NAS and were surprised by the expression of withdrawal symptoms, with comments such as:

"Didn't know if it was normal".
(#2)

Additionally, several respondents did not know that an infant at risk of neonatal withdrawal can have an uncoordinated feeding pattern and adaptations to breastfeeding technique were required, with one participant admitting:

"Don't know if he has had a proper feed yet"
(#1)

Several mothers commented that they wished to be informed of possible challenges earlier and felt they may have coped better had they been prepared:

"Need to be told about this before"
(#3)

Overwhelmingly, opioid dependent mothers expressed negative experiences regarding the information they were given, or lack of it. During the sessions, all of the participants said "no-one told me", at some juncture in relation to decisions they had made. One mother commented that the lack of help and information demoralised her to such an extent that she decided:

"It just seemed easier to give a bottle"
(#1)

Emotional Support

The participants discussed a variety of emotional and psychological factors which impacted on their self-perception of their breastfeeding ability and support needs. These included feelings of responsibility, guilt, low self-worth and fluctuations in their mood with one mother describe her predominating state as:

"You feel defeated"
(#5)

Specific to this group were feelings of shame and guilt that they would be blamed for their baby's condition. Several participants spoke of this, commenting:

"It's my fault (s)he is like this"
(#5)

Intensifying and perpetuating this emotional rollercoaster was the realistic prospect of separation from their baby which caused ongoing and heightened anxiety:

"I worry he will be taken to the baby unit"
(#4)

A recurring theme was the general lack of awareness by others of the mother's vulnerability and distress, with several participants summing this up as *"no-one understands"*. Correspondingly, this increased the degree of reassurance and encouragement required to persevere and overcome breastfeeding difficulties. It also highlighted the need for supporters to show empathy and compassion. A general consensus was the importance of receiving reinforcement of both capability and commitment to breastfeeding:

(You) "Need encouragement"
(#4)

However, one participant noted that previous experiences of critical and judgemental attitudes made it difficult to accept support or establish facilitative relationships with professionals (#6). Additionally, several participants displayed a lack of assertiveness, and subsequently did not ask for help as they did not want to appear *"demanding"* (#6). There was also a reticence to ask for assistance as they felt undeserving of attention and that others were more important:

"Don't want to bother them (midwives), other people need help"
(#5)

Individualized Approach

The concept of individualized support revealed a diverse range of opinions amongst the study participants. Whilst many of the women endorsed this approach they also discussed barriers to successful achievement. These focussed on a lack of practitioner awareness of the specific difficulties inherent of substance use and judgemental and discriminatory actions and attitudes.

One mother discussed receiving inaccurate advice regarding breastfeeding and neonatal withdrawal. She felt the opportunity to discuss her specific needs would have been helpful, and may have prolonged breastfeeding:

"I thought I had to stop breastfeeding as he would be confused if given breast and bottle, it would have been good to have someone to ask"
(#2)

The impact of substitution medication and its negative effect on concentration and retention of information was highlighted by one respondent. She spoke of feeling uncomfortable re-asking the same questions:

"Sometimes you feel sleepy and you need things repeated"
(#5)

Additionally, participants voiced concerns regarding the way in which they were perceived due to their history of substance dependence. This encompassed the issue of respect and the right to be seen and treated as an individual, not defined by circumstances. One mother spoke of her concerns of being stereotyped and thus stigmatised, stating:

"I would hate to be seen as a 'druggie'"
(#4)

Modified Environment

Awareness of NAS supportive management, such as environmental modifications and consolation techniques, varied considerably amongst respondents. Some were well-informed whilst others had only limited knowledge of available strategies.

The mothers who used supportive strategies considered them beneficial with consolation techniques noted as limiting the severity of neonatal withdrawal:

"Settled once she was swaddled"
(#2)

Another recounted that she had noted the impact of external stimuli on her baby but had been unaware that this was a sign of neonatal withdrawal:

"(Baby) was jumpy when it was noisy"
(#1)

One participant explained that she had "read about this myself" (#6) regarding NAS supportive care but had neither been advised of its use nor seen measures applied by clinicians during her hospital stay.

The use of a single room, equipped to maintain a low stimuli environment, received contradictory views. One respondent felt it would be isolating and considered it recriminatory:

"Like you have been put out of the way"
(#4)

Another voiced concern that the modifications may identify mothers and babies as substance dependent and result in stigmatisation (#6), however, most participants felt this was unlikely:

"Would not single you out- everyone is looking out for their own baby"
(#1)

Collectively, the protocols offered an eclectic mix of viewpoints reflective of the differing personal experiences expected of a phenomenon as unique as breastfeeding. Nonetheless, this offers an awareness of the relevance and acceptability of the possible intervention components. Diagram 1 presents a conceptualisation of the findings as breastfeeding support facilitators, modifiers and barriers within the context of substance dependence.

DISCUSSION

The think aloud technique enables a person-based approach to intervention development, with the views of those who are the intended recipients of services informing the key design features. In this study it provided an insight into the breastfeeding facilitators, barriers and modifiers encountered by the substance exposed mother and baby, enabling an assessment of their specific support needs to be made. There were strongly expressed views that practical, psychological and institutional factors influenced the breastfeeding decisions of this cohort. Whilst the findings shared some commonalities with reviews of research with the general breastfeeding population, there were also distinct challenges which were unique to the context of substance dependence. The study participants also appeared as ill-equipped to cope with common breastfeeding difficulties and displayed a lack of resilience or perseverance to overcome these. The findings suggest that generic strategies may not be wholly appropriate to meet the particular breastfeeding support needs of opiate maintained women and that planned, targeted services, such as the proposed intervention, are warranted.

Both the practical application of, and information relating to, the normal physiological process of breastfeeding was highlighted as an essential support need. The importance of facilitating maternal breastfeeding skill is well-evidence as a fundamental tenet of maternity support amongst women of all demographics (Hinsliff-Smith *et al.* 2014; MacVicar *et al.* 2015). For opiate maintained mothers, however, there was an additional requirement for strategies tailored to the physical difficulties associated with NAS symptoms, such as the infant's uncoordinated suck pattern and heightened agitation. Yet, despite acknowledging the need for assistance the respondents demonstrated a reticence to ask for help and further compromised the situation by self-censoring their contact with health professionals. This situation presents an obstacle to the implementation of existing research recommendations which suggest that proactive and

face-to-face breastfeeding support sessions are crucial for women who are challenged by the demands of infant feeding (Renfrew et al. 2012). Therefore, action is urgently needed to reconcile these current disparate positions.

Jansson and Velez (2015) reported a lack of professional understanding and insight of the unique infant feeding needs of substance dependent women. Likewise, Demirci *et al.* (2015) concluded that misinformation from professionals represented a modifiable barrier to successful breastfeeding for this cohort. In this study participants spoke of the necessity of accessing information regarding the impact and consequences of NAS, but found a reluctance, or lack of awareness, amongst some staff groups when the subject was broached. This poses a significant barrier to collaboration between practitioners and mothers in order to set appropriate and realistic infant feeding goals. Without access to accurate, contemporaneous and timely information it is highly unlikely that women will be able to arrive at fully informed decisions. This highlights the importance of clinicians who are equipped to confidently and competently deal with issues of substance dependence, and underscores Balain and Johnstone (2014) recommendations for healthcare services and educationalist to prioritise practitioner knowledge in this area.

Psychosocial influences on breastfeeding behaviour amongst women of varying socio-economic and cultural groups have been extensively researched (de Jager *et al.* 2013). This body of work identifies maternal self-efficacy levels, and the impact of verbal persuasion, practical mastery and physiological stress, as key determinants of breastfeeding continuation (Ingram *et al.* 2015). Self-efficacy relates to the mother's perception of her capability to successfully breastfeed her infant, and women with high self-efficacy who feel confident in their ability are more likely to persevere and react positively when confronted with breastfeeding challenges (Entwistle *et al.* 2010). Thus, an intervention which equips women with the practicalities of breastfeeding alone may be ineffective if it is not complemented by fostering belief in capability and sustaining motivation. Chan *et al.* (2016) evaluated self-efficacy determinants amongst the general population of breastfeeding women and found that positive encouragement and reassurance reinforced commitment to breastfeed, a finding that was echoed in our study. However, opiate dependent women were concurrently challenged by their heightened sensitivity to physiological and emotional stress and a lack of self-belief in their ability. This is a position corroborated by several other authors with Jambert-Gray (2014) reporting an expectation of failure and Chandler *et al.* (2014) noting that the narratives of substance dependent women were rarely optimistic or hopeful. In an exploration of the breastfeeding experiences of women of all demographics, Schmied *et al.* (2011) concluded that meaningful, non-judgemental and individualized strategies were needed to improve outcomes and enhance maternal satisfaction.

Similarly, Lagan *et al.* (2014) found that many infant feeding directives can appear prescriptive and promote didactic breastfeeding practices that may not be in keeping with the ideals of person-centred care. The study findings echoed these summaries, with our participants welcoming the concept of focused strategies which were responsive to their personal circumstances. However, there was also scepticism expressed regarding the ability to establish an environment conducive of supporting an individualized approach. For some respondents, their past experiences of practitioner disapproval, stereotyping and judgemental attitudes cast doubt on the possibility of achieving a facilitative relationship with professionals. It was very clear from the findings that substance dependent mothers considered the attitudes of practitioners as important, if not more important, than their actions. This substantiated research by Pritham (2013) and Roussos-Ross *et al.* (2015) which cited discriminatory attitudes towards substance dependent mothers as instrumental in increasing breastfeeding attrition rates. Consequently, the provision of tailored strategies to sustain breastfeeding is rendered redundant if practitioner attitudes discourage women from accessing these services. A clinical review by O'Grady *et al.* (2009) illustrated a distinct gap between the current global recommendations to promoted NAS supportive management and the clinical application (WHO 2014). Likewise, our study noted that environmental modifications were not consistently applied. Whilst there is limited evidence on the effectiveness of consolation techniques our study participants reported both exacerbation of the baby's withdrawal symptoms in response to environmental stimuli and the positive impact of swaddling. Similarly, Ancona (2015) found that the integration of a low stimuli controlled environment, clinical interventions and proactive family involvement resulted in improved neonatal outcomes. These findings endorse a founding principle of our proposed intervention to modify the environment and provide the resources to foster maternal self-belief in their capability to assess and appropriately react to the infant's behavioural cues.

Strengths and Limitations of the study

This study makes a contribution to the evidence base on breastfeeding support complicated by substance dependence, an area which has so far been under-researched. This can inform the provision of healthcare strategies which better suit the specific needs of this group, with a resulting positive impact on short and long health outcomes. The innovative use of think aloud technique signals the potential of this approach with a population where traditional methodology has restrictions.

A limitation of the study is the use of a single site only and the homogeneity of the population. The research project was conducted in one tertiary hospital, the participants

were recruited from the same substance misuse clinic and all were of similar socioeconomic circumstances. Whilst the sample group were not dissimilar to other studies conducted amongst OMT mothers in Scotland; they were <40 years of age and were socially disadvantaged (Black *et al.* 2013) it is accepted that the research may not be representational of other geographic settings, cultures, demographic groups or where health service provision differs. This limits the degree of transferability of the findings and the applicability of this work to other settings would depend on the specific local context. The sample size was small and self-selecting although this does mirror existing literature in this context where sample sizes typically range from 4 to 8 participants (Demirci *et al.* 2015; Jambert-Gray, 2014; Jansson *et al.* 2008). Whilst the sample does limit potential generalizability of the data the findings do resonate with previous studies conducted both with the general population of breastfeeding women and literature specific to substance dependence (Oakley *et al.* 2014, Jansson and Velez 2015). The majority of the participants, either the mother or the baby, were still in-patients in the hospital when they were interviewed and the women may have been reluctant to criticise care whilst still in contact with health services. The possibility of socially desirable responses, therefore, cannot be discounted. Likewise, there is potential of recall bias for participants out with the immediate postnatal period.

Implications for practice and policy

To optimise practical support opportunities, the onus must be on health care professionals to actively engage with substance dependent mothers, adopt a flexible, accessible and compassionate style and be vigilant to the specific feeding difficulties inherent of neonatal withdrawal. Breastfeeding practice should be underpinned with the theoretical principals of fostering self-efficacy and be mindful of the susceptibility of this group to discriminatory and discouraging attitudes.

CONCLUSION

The opiate exposed mother and baby are a group at risk of significant health and social inequalities. With global directives aimed at tackling disparity through nutritional initiatives there is the need to promote breastfeeding in a more targeted way if those at greatest risk of poor outcomes are to be convinced of the value of support strategies.

This study reported one phase of the development of an intervention aimed at supporting breastfeeding for the substance dependent mother and baby. The findings echoed breastfeeding experiences of women of all demographics but importantly, also illuminated the additional and distinct barriers encountered by those affected by addictive substance use. However, as the findings are specific to our geographic and

cultural context and indeed the women themselves, our conclusions should not be read as definitive but suggestive of this phenomenon and potentially indicative of the experiences of some other substance dependent mothers.

Nonetheless, our findings have implications for policy makers, stakeholders and clinical practitioners, as an awareness of the perspectives of the target population is imperative to optimise the design and delivery of interventions which are effective, relevant and acceptable.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Table 1: Pictorial Representations of Intervention Elements

Pictorial Representation	Intervention (resources and approaches)
Support worker	Provision of a breastfeeding support worker with dedicated time to assist the research participant
Healthcare leaflets	Information on normal physiological process of breastfeeding. Information on the implications of substance exposure on breastfeeding.
Modified cot Swaddled infant Darkened room	Maintenance of a modified environment to minimise external stimuli (light, noise, temperature, activity) <ul style="list-style-type: none"> • Regulation of brightness with black-out blinds, subdued lighting • Temperature control • Reduced traffic in immediate vicinity with clustering of care by healthcare professionals
	Consolation techniques and aids <ul style="list-style-type: none"> • Nesting- modified cot with canopy and padded bumpers • Loose swaddling- swaddle blanket • Non-nutritive sucking
	Psychological support to foster maternal capability and self-belief to assess and react appropriately to infant's behavioural cues
One2One symbol	Individualized approach through collaborative assessment of breastfeeding aims.
Captions of the words: 'advice', 'encouragement', 'guidance' and 'support'.	Emotional support and encouragement Fostering self-efficacy levels Establishment of a facilitative relationship

Table 2: Maternal and Neonatal Demographics and Birth Outcomes

	Age Range (years)	Parity	Birth outcome	Gestation (weeks)	NAS severity
#1	<20	1	Instrumental	>37	Mild
#2	>30	4	SV	35+	Severe
#3	>30	3	SV	>37	Mild

#4	20-30	2	SV	>37	Mild
#5	20-30	2	CS	>37	Mild
#6	>30	1	Instrumental	>37	Severe

Key: SVD- Spontaneous Vaginal birth; CS- Caesarean Section

Table 3: Participant Infant Feeding Characteristics

	Postnatal stage at time of interview	Previous infant feeding experience	Infant feeding status or outcome at time of data collection
#1	Day 5	None	Breastfeeding until 4 th postnatal day then discontinued
#2	3 weeks	Breastfed an infant at risk of NAS	Breastfed initially, now mixed expressed breast milk and formula
#3	Day 5	Breastfed	Exclusive breastfeeding
#4	Day 5	Formula	Exclusive breastfeeding
#5	Day 3	Formula	Mixed breastfeeding and formula
#6	6 months	None	Expressed breast milk by bottle for 4 months