Original Article

Reconfiguring insufficient breast milk as a sociosomatic problem: mothers of premature babies using the kangaroo method in Brazil

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Abstract

This study focuses on Brazilian mothers who gave birth to premature babies who were discharged from hospital using the Kangaroo Mother Care Method. While mothers left the hospital breastfeeding exclusively, once back at home, they abandoned exclusive breastfeeding because of insufficient breast milk (IBM). In this project we explored how IBM was interpreted by mothers within their social context. Participatory research using the Creative Sensitive Method was done in the homes of mothers with family members and neighbours. We described the conflicting social discourse that influenced the mothers' perception of IBM and explored their sources of distress. At the hospital and Kangaroo ward, mothers considered that clinicians recognized they were experiencing IBM and thus supported them to overcome this problem. Back at home and in their community, other sources of stress generated anxiety such as: the lack of outpatient clinical support, and conflicting local norms to care and feed premature babies. These difficulties combined with economic constraints and discontinuity in models of health care led mothers to lose confidence in their breastfeeding capacity. Mothers, thus, rapidly replaced exclusive breastfeeding by mixed feeding or formula feeding. Our analysis suggests that IBM in our sample was the result of a socio-somatic process. Recommendations are proposed to help overcome IBM and corresponding contextual barriers to exclusive breastfeeding.

Keywords: breastfeeding, premature, socio-somatic, insufficient breast milk, socio-cultural, kangaroo mother care method.

Introduction

The national rate of exclusive breastfeeding in Brazil increased between 1999 and 2004 from 56.9% to 69.5% (Brazilian Ministério da Saúde 2005). This represents a weak result considering the multiple and

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intensive actions of the pro-breastfeeding movement and the Brazilian Program for Breastfeeding Incentive (Brazilian Ministério da Saúde 1991). Following this movement, in 2002, the Brazilian National Health System adopted the Kangaroo Mother Method, a strategy to increase breastfeeding skills of mothers of premature and low-birthweight infants (Brazilian Ministério da Saúde 2002; Lamy *et al.* 2005). Despite these efforts, studies have indicated persistent low rates of exclusive breastfeeding durations regardless of infant gestational age and geographical region. For example, Bittencourt *et al.* (1993) found that 98.9% of mothers of premature and full-term babies in Rio de Janeiro were exclusively breastfeeding upon discharge from hospital. After 1 month, this rate fell to 44.88. Low duration rates for exclusive breastfeeding represent a serious public health problem in Brazil and is all the more serious for premature and low-birthweight babies, who face a higher risk of neonatal morbidity and mortality (Xavier *et al.* 1991; Bueno *et al.* 2003; Cabral & Groleau 2007). The problem is not unique to mothers of premature or low-birthweight babies. Although the benefits of breastfeeding are widely known around the world, many mothers of both full-term and premature babies abandon exclusive breastfeeding before the end of the recommended 6-month period (WHO/UNICEF 1990). One of the most frequently cited reasons given by mothers worldwide to explain their abandonment of exclusive breastfeeding is that their breast milk is of poor quality or of insufficient quantity to nourish their babies adequately (Borges & Philippi 2003; Ramos & Almeida 2003). The World Health Organization has recently recognized that insufficient breast milk (IBM) is a public health concern; estimating that worldwide, only 35% of children under 6 months are breastfed exclusively (WHO 2006). Our objective in this paper is to examine the social experiences of mothers who gave birth to premature babies using the Kangaroo Method in Brazil in relation to exclusive breastfeeding and IBM. For this purpose, we will seek to understand the experience of IBM not only from the mother's perspective but also from the perspective of those who are close within their social environment.

Background ontology of IBM

The biomedical literature offers three types of explanations for the problem of IBM. The first explanation suggests that IBM is an objective, biological problem of rare occurrence, as very few women are physically unable to breastfeed (Neifert 2001) and that the mammary glands of all women have a capacity of producing 30–100 mL of milk per breast (Hartmann *et al.* 1995). This perspective also suggests that there is a strong relationship between mother's milk production and the frequency of infant latch (Sloan *et al.* 2006). Finally, this perspective suggests that, in the case of premature birth, lactogenesis can be delayed for physiological reasons. Such a purely biological explanation for IBM is limited and reductionist, in that, it reflects a disembodied conception of women (Dykes 2005) and ignores the role played by emotions and their interplay with lactation hormones. Furthermore, it still cannot explain why so many women worldwide experience IBM.

The second explanation for IBM presents it as a subjective experience by mothers who misinterpret the behaviours of their baby, or rationalize their decision to abandon breastfeeding for fear of being judged, or are unable to articulate their breastfeeding problem (Bates 1996). Such explanations reduce the problem of IBM to either an individualistic strategy adopted by women without agency, or a manipulative one used to avoid social judgment. It could also be associated with mothers' inability to identify warning signs and behaviours of their babies.

The third explanation presents IBM as an objective problem of a psychosomatic nature (Lau 1999). This more recent biomedical explanation for IBM is based on an area of research that, despite certain limitations, has the merit of acknowledging the link between self, body and emotions. In this perspective, Lau (1999) suggests that maternal emotional distress may interfere with the production of oxytocin, the hormone that triggers the production of maternal milk. Although the relationship between anxiety and oxytocin output is not clear-cut and requires further substantiation (Sisk *et al.* 2006), the pathway it opens merits reflection. However, we should exercise caution in considering IBM as a psychosomatic

problem, as this type of information could be misused to suggest that maternal temperament directly influences milk release, thus, contributing to the detrimental feelings of failure experienced by so many women (Bryant *et al.* 1992). Furthermore, psychosomatic explanations in general, commonly based on Descartes' mind-body dualism, have been the focus of much debate and criticism in medicine and psychology mainly because they ignore the self's constant dialogical relationship with others (Hermans *et al.* 1992).

Despite their differences, the above three explanations of IBM have certain commonalities: they are for the most part individualistic, and they fail to address the political, economic, social and cultural contexts, surrounding IBM. As such, they can lead to reductionist, simplistic and patronising statements regarding women, their behaviours, their personalities, their emotions and their experiences *vis-à-vis* IBM. This offers little in the way of solving the complex problem of IBM and may in fact contribute to placing the blame on breastfeeding women themselves.

By seeking to understand how the physical body mediates between cultural representations and collective experiences, medical anthropological studies have attempted to address the 'contextual' limitations of psychosomatic theories and have identified socio-somatic processes connecting the physical body to the social body. Such studies reframe the mind-body dualism in its social context. In the literature of anthropology and psychiatry, Kleinman & Becker (1998) proposes that we can better understand socio-somatic problems by examining the social contexts and processes underlying physiological responses and bodily experiences (1998, 391). In women's health studies for example, Lock (1998) found cross-cultural evidence that menopause is a social construct and not an invariant physiological event. Although breastfeeding has been studied from a socio-somatic perspective (Dykes 2006; Groleau *et al.* 2006), fewer studies have examined IBM as a socio-somatic process.

The phenomenological research of Dykes & Williams (1999) further substantiates the importance of studying IBM as a socio-somatic problem. The authors argue that perceived breast milk inadequacy

is couched in a complex and synergistic interaction between socio-cultural influences, feeding management, the baby's behaviour, lactation physiology and the mother's psychological state (232). Their study is unique, and the relationship it suggests between insufficient milk production, maternal emotional state and socio-cultural context has yet to be confirmed in other groups of mothers. Because of the vulnerability of premature babies and the health benefits provided by exclusive breastfeeding, it becomes all the more relevant to study IBM and exclusive breastfeeding abandonment among this clinical population (Sisk *et al.* 2006). With the exception of the phenomenological study by Sweet (2006) on breast expression in mothers of premature infants, there is a paucity of qualitative studies on the experience of breastfeeding premature infants in general. This paper will argue that IBM needs to be studied from a socio-somatic perspective, particularly, if our goal is to tailor such interventions to the socio-cultural realities of these women.

Methodology

In order to better understand the problem of insufficient milk in the context of mothers' social experience, we used the Creative Sensitive Method (CSM) developed by Cabral (1998) to collect data among mothers and their close ones (family members and neighbours). CSM is based on the participatory research and critical awareness philosophy of Paulo Freire (2006), as well as art-based methodology. This method seemed more appropriate than simply restricting ourselves to verbal data because the participants in our study had generally very low levels of education and limited vocabulary for expressing complex ideas and related social experiences. Furthermore, because of local cultural mores, participants were reticent about discussing breasts and breastfeeding in front of others. We analysed the data using Fairclough's Critical Discourse Analysis (2001). This approach allowed us to analyse a diversity of qualitative data (drawings, theatrical performances, keywords, verbatim narratives) by considering them as text, while taking into account the context of power relationships. In the following section, we will describe our sample and sampling

method, address certain ethical issues, and outline the procedures we used for the collection and analysis of the qualitative data.

Recruitment and sample

We recruited participants by consulting medical registers at the Kangaroo Inpatient Ward and outpatient clinics. We used a convenience sample, inviting mothers to participate in our study according to certain criteria. Twenty-three from a total of 51 breastfeeding mothers contacted by telephone were selected on the following basis:

1. They were the primary caregiver.
2. They were breastfeeding their premature baby (<37 weeks).
3. Their baby was being followed up by an outpatient clinic.
4. They volunteered to participate in our research project.
5. They had a telephone number and an accessible address.
6. They were discharged from the Kangaroo Ward within the last 30 days.
7. They lived a neighbourhood not considered dangerous at the time of the telephone call.

Indeed, slums (*favellas*) are off-limits to outsiders during conflicts between drug lords and police. As well, because of the logistical requirements of the project and the need to organize research visits efficiently, a home telephone was considered essential. For technical and financial reasons, it is difficult to own a phone in the slums, and this may have limited our sample to mothers who were slightly better off economically. In the end, 11 mothers were included in the research project along with their close ones. This gave us a sample of 39 participants ($n = 39$), including mothers, family members and neighbours.

Ethics

At the first home visit, all mothers and their close ones read, or had someone read to them, an 'Informed Consent Form', which they then signed.

The protocol had been previously approved by an Institutional Ethical Review Board (Protocol 002/06).

Procedures for data collection

Babies were discharged from the Kangaroo Ward at different gestational ages. The criterion used for their discharge was weight of at least 1500–1800 g. The first home visit was done 1 month after discharge, and the subsequent two occurred 2 weeks and 4 weeks later. The home visits were scheduled on Saturdays to ensure that all participants were present. The fieldwork was carried out at each of the 11 households. Three home visits per family were completed between January, 2002 and September, 2003. Each home visit involved approximately 3 h of participant–observation, while the duration of each group activities varied from 40 to 150 min, decreasing, in time, as the group discussion reached data saturation (Denzin & Lincoln 2005). The art-based activities were completed during the first two visits, while the third visit aimed at validating the data and deliver nursing care. The researcher–facilitator acted as participant–observer during the home visits. Observations focused on caregiver behaviours such as playing, diaper changing, administering medication, holding, Kangaroo holding, breastfeeding, bottle-feeding and physical infant care. Immediately after the observation session, the second author (I.E.C.) recorded her observations in a log book. The other 2 h of observation were done during the implementation of the art-based activities and following delivery of nursing care for the baby (i.e. measurement, babies' physical assessment). After leaving the mother's house, I.E.C. again took notes of her observation in the same log book.

The CSM for data collection was developed by the second author of this study (Cabral 1998). It comprises several steps. In the first step of our study, participants, i.e. mother, family members and neighbours, were asked to engage in a collective art-based production. During the first visit, participants were asked to produce a collective drawing. At the following visit, participants were asked to engage in a collective theatrical performance. Each of these artistic

productions was carried out in response to a specific 'generative question', i.e. a broad question that helped to inform and guide the artwork and the ongoing discourse of the participants. The first generative question, asked at the drawing session, was the following: 'Since you left the Neonatal Intensive Care and Kangaroo Mother Units, how has been for you taking care of your baby at home?'. Participants were then asked to draw and add keywords to a schematic figure of a baby's body previously drawn by the researchers on a large sheet of brown paper.

The objective of the first generative question was to help mothers and their close ones produce what we metaphorically called 'body knowledge' during the session, i.e. a description of how to take care of their babies using drawings and keywords.

At the second group session, the following generative question was asked: 'Now that you are back home, what role does breastfeeding play for you and your baby?'. This question aimed at producing what we metaphorically called 'concrete knowledge' in the group setting. Concrete knowledge refers to an experiential and interactive type of knowledge, which is why we asked participants to produce a collective theatrical performance. We then asked mothers, their family members and neighbours to act out their experiences based on this second generative question. The performances were filmed by a researcher, and occasionally by some participants who preferred to film rather than perform. We asked family members and neighbours to enact the story from the first moment mothers returned home with the baby. Group performances focused on the first day back home from the Kangaroo Ward, the first breastfeeding session in the house and their first night. Most family members and neighbours played themselves in this performance; however, some decided to play the role of nurses in the Neonatal Intensive Care Unit (NICU).

Procedures for analysis of the qualitative data

Each household group then presented their art-based production separately at different sessions. This was followed by group discussions during which the

researcher-facilitator took notes and, using colours and keywords, coded identified themes (e.g. breastfeeding, physical care and/or medication, social and/or financial support). In the next step, the researcher-facilitator presented the themes to the participants, who they then asked to choose which ones they wanted to discuss. The fourth step was a combination of interaction, dialogue and negotiation, which led to further coding by the group into sub-themes (e.g. breastfeeding before bottle-feeding, after bottle-feeding, outside the home, as a way to give love, etc.). In the final step, the participants and researcher-animators re-coded the sub-themes into new thematic categories (e.g. breastfeeding as source of nutrition, as source of affection, as a potential sexual problem, etc.). This participative approach for coding the qualitative data ensured that a combination of professional and popular knowledge was represented in the coding process.

While we initially decided to use Discourse Analysis, we soon realized that the empirical material consistently revealed an influence of macroscopic and microscopic power issues. We, therefore, chose to use Fairclough's Critical Discourse Analysis (2001) because it provides a better framework for addressing these issues. An example of a macroscopic power issue is the context of extreme poverty (slum conditions) in which most of the participants live and in which families have to share a one-room house. For example, adults have no other recourse but to have sexual relations in presence of the baby. Many mothers felt that breastfeeding immediately after sexual relations was a problem. Critical Discourse Analysis states that discourse involves the processes of producing and interpreting an extended sample of spoken or written language. The interaction process among speakers and addressees or writers and readers, establishes implicit meanings, power relationships and social struggles, and explains the level of relationship and context. As such, we considered the narratives and interactions as spoken text, and the field notes and art-based productions (drawings, collective theatrical performances) as written text, which was then analysed and interpreted as an integrated corpus consistent with the coding generated through the participatory process.

Results

In this section, we first describe Brazilian mothers of premature babies who participated in the study¹. We then explore the multiple meaning mothers and their family members and neighbours gave to the problem of IBM during the two art-based production activities, namely, the first 'body language' drawing activity and the second 'concrete knowledge' collective theatrical performance. We will then suggest that in the NICU they experience IBM as a physiological problem, but upon discharge from the hospital, they experience it as a socio-cultural process influenced by family, neighbours and the health system.

Description of participating mothers

All 11 mothers participating in our study left the Kangaroo care setting breastfeeding exclusively. They all had low levels of education: 6/11 had elementary school or less, 2/11 dropped out before completing high school and 3/11 completed high school. Their ages ranged from 16 to 38. All lived in a context of poverty with a monthly personal income of \$100–\$300 (US dollar). Nine out of the 11 mothers lived in the slums (*favelas*) of Rio de Janeiro. All infants were born at <36 weeks and at birthweights between 1000 and 1800 g. Their weights at discharge from the Kangaroo Mother Care Unit ranged from 1500 to 1800 g.

Insufficient breast milk in the hospital setting: a medically recognized somatic problem

Conditions in the two Kangaroo Mother Method settings (the NICU and the Kangaroo Ward) were experienced by mothers as favourable to breastfeeding exclusively. Family members and neighbours were not involved in the Kangaroo Mother Method activities held in the medical settings. The Kangaroo Mother Method consists of the mother holding her premature baby against her chest with a cloth wrap in continuous skin-to-skin contact. In this way, the baby is kept at a suitable temperature and in proximity with the breast,

which is expected to stimulate mother's milk production. The Kangaroo Mother Method involves three types of intervention: providing clinical guidelines to promote breastfeeding, offering psychological support to foster mother–infant attachment and consistently using the teaching–learning process to increase mother's skill in the caring of her premature baby (Cabral & Groleau 2007).

The participant's narratives, mainly those of mothers, focused on the social context of the hospital. Family members and neighbours were not involved in the care of the premature baby at this stage. In general, mothers felt that hospital staff adequately recognized IBM as a somatic problem.

Many mothers of premature babies experienced IBM in the early stages of breastfeeding and recalled in their narratives that medical staff (physicians, nurses, nutritionists and speech therapists) had explained to them that it was a normal and common problem. Having IBM constituted the first barrier to breastfeeding that mothers recalled. They explained that clinicians recommended they pump their breasts to stimulate milk production. Although the generative questions relating to mothers' experience focused on the period after discharge from the Kangaroo Ward, mothers nevertheless recalled their initial breastfeeding experience in the NICU and Kangaroo Ward, as in this example:

They [clinicians] gave me information about breastfeeding and how to stimulate milk flow. I spent a month without breastfeeding [the baby was in the NICU]. I went to the Breast Milk Bank to pump, but I never had enough milk.

In the first month at the NICU, the need for continuously expressing milk at the Breast Milk Bank was interpreted by mothers as a reflection of their own incapacity to provide enough milk for their babies. They considered their efforts to stimulate the breast milk flow as very demanding and uncomfortable; it represented for them an additional barrier to initiate breastfeeding.

Therefore, mothers saw the above-mentioned medical staff as important resources of support to help them gain confidence and increase their milk production. While being constantly watched and monitored increased their milk production, at times,

¹Socio-demographic data on family members and neighbours was not collected.

mothers also experienced this as a source of stress. Nevertheless, mothers came to the understanding that IBM was a normal, transitory somatic problem for mothers of premature babies. Some of the collective theatrical performances, mothers, family members and neighbours did underline perceived conflicting and potentially detrimental messages from health professionals. The following excerpt is from a collective role play between a mother (F), a family member and neighbour (E) who, incidentally, had also given birth to a premature baby and another neighbour (J). E and J play hospital Nurse A and B respectively, offering assistance to the mother with respect to her IBM problem:

E as Nurse A: *Well, I started out with the matter of nursing, particularly breastfeeding. I focused on what is going on when the baby is nursing, if she is able to suck as she should. . . You [pointing to the mother] even told us that you were having a little difficulty, that you thought that you had no milk. So I focused more on this part of the information about breastfeeding. I focused on the matter of the mother's anxiety when breastfeeding.*

J as Nurse B: *What information do you give them?*

E as Nurse A: *When you are breastfeeding, anxiety generally causes problems. You get too anxious because there is no milk coming out even if you squeeze the breast. This anxiety is natural. It is difficult to produce milk because anxiety causes an internal change which stops the milk from coming out. But the stimulus provided by the baby sucking at the breast helps the milk to come out.*

J as Nurse B: *But I think we are being unfair when we say that anxiety does not allow the milk to come out. The mother is nervous; what can she do? How can she not get nervous? What can the mother do to avoid getting so nervous? She could leave the unit for a while. She could ask someone to stay with the baby for a while. She could watch a little TV or take her baby for a stroll . . .*

F (Mother): *Well, I don't get nervous now. There [at the NICU], I did get nervous a lot. I think it was because of the people at the hospital.*

E as Nurse A: *I think you felt that way because of the hospital environment. You were far from home, far from your family . . .*

The above excerpt demonstrates that, even when the Kangaroo Mother Method was applied in the medical setting, some mothers still felt anxious about their IBM, while others also felt anxious because of their separation from family members. Furthermore, the excerpt indicates that the medical discourse of IBM as a psychosomatic problem has, in fact, penetrated the popular discourse of these mothers. Mothers that participated in our study recalled that they gradually overcame their IBM problem in the NICU, as the medical team focused their efforts on increasing mother's breast milk production.

Once mothers and infants were transferred to the Kangaroo Ward, mothers explained that the attention of the staff was then on maintaining exclusive breastfeeding. Many of the mothers felt that this transition from the NICU to the Kangaroo Ward contributed to their overcoming of their IBM problem. A mother comments:

But she [her baby] had no trouble starting to breastfeed once we were in the Kangaroo Ward. She started right away, because she didn't use any kind of pacifier or bottle when she was there.

Most mothers did not know, in advance, how long they were going to stay in the NICU or the Kangaroo Ward, as this was difficult to determine. They were told that contrary to the NICU, the Kangaroo Ward would provide them with a bed and four meals a day while still receiving the required clinical support and guidance to maintain or increase their milk production. The mothers did not discuss these practical advantages but instead, recalled focusing exclusively on their infant's well-being, weight gain and attachment, as well as their own ability to nurse, despite their anxiety about being separated from their close ones. They recalled the positive factors pointed out by clinicians who were trying to convince them to go to the Kangaroo Ward after being discharged from the NICU. A mother describes the rationale motivating her decision:

At the [NICU] ward, I was told that it was best for the baby [the Kangaroo Ward], that she was going to put on weight faster, because that way [holding the baby skin to skin], she would be able to feel her mother's warmth.

Mothers recalled the clinical interventions in both medical settings (NICU and Kangaroo Ward) designed to help them increase their milk production, despite their IBM experience and the conflicting messages regarding their anxiety. The long stay at the NICU and Kangaroo Ward remained, as evident in their discourse, a source of distress for the mothers, leading many of them to abandon. As one mother recalled:

So every mother was suspicious because no one said anything good about the Kangaroo Method. Some mothers went there. Suddenly, they gave up and left. In the end, the whole unit was empty. The nurse told me that I should go to the Kangaroo Ward, despite the fact that I didn't have enough milk for my baby. But I didn't know anything about it. I didn't know I had to hold the baby against my chest all day long.

Ultimately, the long stay at the NICU and Kangaroo Ward was perceived by mothers as both favourable and unfavourable – favourable because they saw their milk production increase and felt supported in their endeavour by the staff; unfavourable because neither setting provided suitable ways to 'pass the time' while being separated from close ones for so long. Along with the many strategies for improving mother's capacity for producing milk, mothers recalled the emotional encouragement offered by clinicians who reminded them that their constant presence in the Kangaroo Ward was the best choice for their babies. This encouragement allowed many mothers to remain in the Kangaroo Ward and continue breastfeeding, as illustrated by the following dialogue between a researcher and a mother during a 'body knowledge' art-based activity:

Mother: *It [her stay at the Kangaroo Ward] was good for the baby.*

Research-animator: *But not for you?*

Mother: *Not at all! The only good thing was that I was always with her. It was good to know that I was there with her. At the Kangaroo Ward they taught me a lot of things like how to breastfeed. How am I going to handle it on my own? Will I manage to do it?*

In the two medical settings of the Kangaroo Mother Method, mothers recalled that clinicians recognized their IBM as an expected somatic problem

associated with premature birth and that they required medical attention and support to help them overcome this barrier to exclusive breastfeeding. Mothers considered that they overcame this barrier during their Kangaroo Ward stay; in fact, all of them were breastfeeding exclusively upon leaving the Kangaroo Ward. However, once they were back home, IBM re-emerged as a problem.

Insufficient breast milk in the home setting: An unexplained problem

When mothers returned home, they once again experienced IBM. However, this time they reconfigured its meaning. The following mother's narrative illustrates this new perception of IBM:

Breastfeeding is great. But he [the baby] takes the breast too little, sleeps too much and wakes up every so often crying. I think my breast milk is too weak for him. He sleeps; after, he wakes up crying, feeds, and goes back to sleep. Since he only takes a little and falls asleep, he wakes up every so often wanting more, but there is not enough time for my breasts to swell up again with milk. So, that's the way it is.

According to this narrative, mothers perceived weak latch, short sleep cycle, frequent waking and crying after breastfeeding as indicators of IBM. Babies only drank a small amount of milk, were hungry all the time, and finally, lost weight. Mothers considered that they had IBM because their breasts were not as swollen as other women they knew. They also considered it difficult to attend to their infant's frequent demands for breastfeeding, which caused fatigue. Moreover, they believed that they had weak breast milk and could not satisfy the infant's nutritional needs. These perceptions caused considerable anxiety and nervousness for the mothers. In addition, their discourse indicates that the discontinuation of clinical support and health promotion in the home setting contributed to an increase in their anxiety, which, in turn, made them less confident in overcoming the emotional barrier to breastfeeding their premature baby. In the following dialogue, a mother and her neighbour refer to their new challenge of continuing breastfeeding at home.

Mother: *Like what happened to me at the hospital . . . I think I have too little milk because my breasts do not swell; they're always soft.*

Researcher–animator: *What do you do then?*

Mother: *The same as they did at the NICU. When I think he is still hungry, I give him the other kind of milk [formula] from a plastic cup.*

Mother: *At first, when I got home, I was nervous because there was no milk flow. Now I don't worry about that anymore. She [the baby] feeds with my breast and with the bottle. She is putting on weight. I don't worry anymore.*

Neighbour: *I think you were worried about the milk flow because you were seeing that in other women. But every woman is different, right? You were being too hard on yourself, and that's not like you.*

This mother, like others, applied the strategy she observed at the NICU to manage her IBM problem by supplementing her breastfeeding with formula from a plastic cup. When mothers left the Maternity Centre, clinical support was discontinued and immediately replaced by social support from neighbours and family members. This situation also contributed to mothers rapidly substituting exclusive breastfeeding with mixed feeding, as the following dialogue illustrates:

Research–animator: *And at home, who do you talk to about that [insufficient breast milk]?*

Mother: *Nobody. At first, I talked to my mother. Afterward, she went back home, and now I have nobody to talk to. My husband only comes back home in the evening.*

Research–animator: *And your mother, what did she say about that?*

Mother: *She said that I should be patient, that in time everything would be all right. She also said, "If I were you, I'd give him bottle formula".*

Anxiety, distress and nervousness associated with the lack of clinical support after discharge from the Kangaroo Ward contributed to a decrease in mothers' self-confidence, regarding their capacity to adequately feed their premature baby. In turn, babies took the breast less often because of the

formula supplementation. Mothers chose to supplement breastfeeding with formula mainly because they had experienced this method during their stay at the NICU. But it also corresponded well with the recommendations of their immediate family, relatives and neighbours. This mediating strategy helped them avoid contradictions between perceived clinical and family recommendations, regarding their IBM problem. However, as mothers did not pump their milk as they had done in the NICU, they were not stimulating further milk production and, in many cases, gradually produced less milk. Consequently, the problem of IBM re-emerged as a barrier to breastfeeding. Moreover, many other demands in the home setting contributed to this barrier and prevented mothers from taking care of their babies with self-confidence. Many mothers felt insecure, exhausted and isolated in their role as new caregivers.

Mother: *Yeah, you know what it's like to have a premature baby. All that insecurity. How am I going to take care of it? Will I manage to do it? I am very worried. But when I was at the Kangaroo Ward, I had help from everybody for breastfeeding her. I don't have the same help now.*

Another mother: *I tried to give him the bottle, but he doesn't like it too much. It's not easy. I have many things to do: clean the house, wash his clothes by hand, go to the market. You know, sometimes I'm exhausted.*

Once back home, mothers were followed up by out-patient clinics that were not involved in the Kangaroo Mother Method. Clinicians working in these clinics did not provide them with support for overcoming their IBM problem. In fact, mothers reported that many of the clinicians encouraged them to use formula when their babies were not gaining weight as desired. The following excerpt from a 'body knowledge' art-based production illustrates this point:

Mother: *I pay attention to his [baby's] weight. Every week I take him to the doctor or to the nearby community health center. I keep an eye on his weight.*

Researcher: *So he is gaining weight because of the formula . . . ?*

Grandmother: *I think that he is gaining weight because of both the breastfeeding and the supplement. We don't give the supplement all the time. We only give it when we think he's still hungry.*

Researcher: *So you do produce milk, don't you?*

Mother: *You haven't seen it when he's crying! It's like all hell breaks loose! I get desperate! And that happens every time I give him the breast. He nurses, nurses, nurses. and he gets desperate, too! It's like he's bringing down the house! Then there is nothing else to do but to cry with him.*

Grandmother: *Everybody gets desperate. The first time it happened was in the middle of the night. His father had to get up and buy him milk.*

Researcher: *Have you told the doctor about this?*

Mother: *Of course! She was the one who told me to supplement breastfeeding this way!*

The above dialogue illustrates how formula is used only as a supplement, because it is too expensive and because breast milk is considered more nutritious. However, baby's weight gain is of concern to the mother, mainly because of her interactions with the outpatient clinic doctors. As the family lives and sleeps in a one-room house, the strain put on them by the baby's crying at night is also an important stress factor.

Thus, although mothers were initiated to exclusive breastfeeding through the Kangaroo Mother Method in the hospital setting, once they returned home, several health system and social factors, as well as certain physiological and psychological factors, conspired to rekindle their IBM problem. Our data suggest that the medical practices and knowledge transmitted to mothers in Kangaroo Mother Method settings to help them deal with their IBM problem were not adequately maintained following their discharge from the Kangaroo Ward. The collective discourse of mothers and their close ones which emerged during the two art-based activities revealed that mothers had to negotiate conflicting views inherent not only in the socio-cultural context of their lives but also in the systemic context shaped by discontinuous health care and economic insecurity.

Analysis: reconfiguring IBM

At first, the hospital routine provided an atmosphere that encouraged and supported breastfeeding. Mothers of premature babies using the Kangaroo Mother Method during their stay in the NICU and Kangaroo Ward were in constant skin-to-skin contact with their babies and offered both breasts without a set schedule. These physical conditions were conducive to mothers' feelings of adequacy to deal with their IBM problem, especially in the early days and weeks when they were attempting to establish an adequate milk flow. Also in the hospital setting, when mother's milk was insufficient, breast milk provided by the Breast Milk Bank was offered to babies, while formula was given only as a last resort. Additionally, supplemental milk given to premature or low-birthweight babies – being expressed maternal milk, milk from the Milk Bank or formula – was administered in a plastic cup or feeding tube, never from a bottle.

Mothers of premature and low-birthweight babies initiated in the Kangaroo Mother Method first learned that they had IBM from clinicians after delivery. The latter emphasized the necessity of improving mothers' milk flow and used mechanical expression of breast milk (pumping) as a strategy to overcome this problem. Thus, in the hospital context, mothers considered that their problem of IBM was recognized as a somatic problem and received the appropriate clinical attention and support. Mothers subsequently used this prototypical experience of breastfeeding in a medical setting as a reference for interpreting their breastfeeding experience at home and in their community settings. Once back home, they re-experienced low breast milk flow, and their breasts were softer and less swollen than in the Kangaroo Ward. Mothers also assumed that their babies incessant crying was a sign of IBM. They were unable to identify reasons for this crying, and this made them feel less confident in maintaining their breast milk supply and, therefore, more anxious.

Discussion: IBM as a socio-somatic problem

Despite scientific advances in breastfeeding knowledge, restrictions put on the marketing of milk

formula and the advocacy of breastfeeding since the 1970s, IBM remains one of the main reasons cited by mothers for abandoning breastfeeding (Sloan *et al.* 2006). Studies of infant feeding patterns seldom go beyond identifying a mere listing of beliefs relative to appropriate infant feeding (Segura-Millán *et al.* 1994), psychological dispositions such as perceived self-efficacy (McCarter-Spaulling & Kearney 2001; Noël-Weiss *et al.* 2006) and correlations with socio-demographics factors (Segura-Millán *et al.* 1994) or potential conflicting professional practices such as weight gain of babies being used as a parameter (Sachs *et al.* 2006). With the exception of a few qualitative studies of mothers with term babies and preterm babies (Dykes & Williams 1999; Dykes 2005; Sweet 2006), most studies fail to reveal the collective meanings and experience that lead so many women to believe that their breast milk is insufficient or inadequate. Rather, the determinants of IBM are largely discussed in the literature in positivistic terms, while local cultural representations and experiences regarding the adequacy of breast milk are rarely recognized (Groleau *et al.* 2006).

Most mothers participating in our study cited feelings of distress, anxiety, concern over the vulnerability of their babies, fear about not having enough milk and isolation from their close ones while in the two Kangaroo Ward settings. This corresponds with the findings of Zolkowitz & Papageorgiou (2005), who suggest that mothers of premature babies tend to present higher levels of anxiety. We have known, for a while, that negative maternal emotions could interfere with the production of oxytocine, the hormone responsible for lactogenesis (Lau 1999). Thus, it could be assumed that IBM is related to a woman's negative emotions as the narrative of some mothers in our study has suggested. Our results, however, illustrate that this psychosomatic explanation ignores the socio-cultural context of breastfeeding. Breastfeeding cannot be reduced to either an instinctive behaviour or a psychosomatic aetiology with no contextual forces contributing to its genesis. The role, both supportive and conflicting, played by family members, neighbours and clinicians in the genesis and perception of IBM, clearly points to fundamental social and systemic influences. Another common and possibly

misleading explanation for insufficient milk is that women who are no longer interested in breastfeeding use it as a rationalization for stopping the practice (Dettwyler & Fishman 1992). However, it was argued that, because breastfeeding is declining in the western world, mothers are no longer confident in their breastfeeding ability (Segura-Millán *et al.* 1994). Breastfeeding mothers incorrectly interpret the cause of their babies' cries as an expression of hunger, often assuming that their milk is inadequate or insufficient. Our results show that this explanation is also simplistic and does not apply to populations living in the context of poverty. We do suggest, however, that economic issues linked to housing and the cost of formula are important factors in mothers' decisions regarding breastfeeding, even in cases where mothers, like the ones in our study, are interested in and committed to breastfeeding by accepting to be away from home for so many weeks in a Kangaroo Ward. There is clear evidence in the literature that the introduction of formula negatively influences the duration of breastfeeding (Humenick & Howell 2003). A reduction in breastfeeding results in a decrease in milk production, or is perceived as such by mothers who observe a decrease in the volume of their breasts. In our study, mothers perceived that both inpatient and outpatient clinicians recognized their IBM problem by monitoring their babies' weight. Our data suggest that the explanation of Humenick & Howell (2003) does not take into account mothers' exposure to conflicting messages regarding breastfeeding, or the economic and systemic barriers in health care that contribute to the genesis of the problem.

The problem of IBM remains unresolved in the medical literature (Roy *et al.* 2002). Somatic problems and symptoms that have no definite aetiology are common in all areas of primary care, as well as in specialty medicine (Nimnuan *et al.* 2001). This lack of explanation reflects the limits of biomedical knowledge, available technology and the difficulties of assigning a clear cause to subjective complaints that have no objectively measurable correlates (Kirmayer 1999). We also know that clinicians tend to develop a range of strategies for deflecting such threats to their medical competence by shifting the blame from lack of medical knowledge to the elements lacking in psy-

chological traits or states of the patient, such as psychosomatic explanations (Kirmayer 1999, 2000)

While our data suggest that clinicians in the Kangaroo Mother Method settings did recognize IBM as a somatic problem, some clinicians elicited, conflicting discourse regarding mothers' anxiety, and evoked a psychosomatic component to the problem even at the NICU stage. Nevertheless, mothers did declare having received proper medical attention and technical and emotional support during their Kangaroo Ward stay. However, such support was not only provided by outpatient clinicians, who recognized the existence of IBM babies, but also encouraged mothers to supplement their feeding with formula. Outpatient clinicians, thus, contributed to aggravating the problem.

A clinical encounter is a situation of unequal power and authority in which interactions reaffirm the dominance of clinicians, especially when mothers are poor and have low levels of education. Clinicians tend to direct the conversation and limit mother's ability to present aspects of their experience linked to IBM. Barriers to exclusive breastfeeding at home can be interpreted by both clinicians and mothers as irrelevant to the task of diagnosis. Diagnosis of IBM, in turn, is governed by hypotheses based on the clinically objective and measurable signs of the problem such as poor infant weight gain. However, contextual factors do contribute to the problem such as the recommendations of relatives and neighbours to feed the baby with formula and mother's daily tasks and responsibilities. Absence of support, anxiety linked to conflicting discourse and limits imposed by housing facilities and economic conditions are ignored, perhaps, because they are outside the clinician's awareness or because of implicit biases. Our findings suggest that the experiences, opinions and practices of relatives and neighbours play an important role in infant feeding interpretations and influence mother's behaviour once they return home. This finding corresponds to recent studies, which also suggest that infant feeding practices are strongly influenced by cultural values, norms, trends and moral rules of society (Groleau *et al.* 2006). Kirmayer *et al.* (1993) explain that suffering can occur when distress lacks a social meaning and is in opposition to social norms.

Additionally, mothers experienced anxiety and distress when they started experiencing IBM and could not explain why they were having this problem while not receiving medical support for continuing exclusive breastfeeding at home. The lack of popular knowledge about the special needs of premature babies may also have caused additional anxiety for mothers now facing conflicting views on infant feeding strategies and care. Mothers, thus, introduced mixed or formula feeding based on their perception that their milk was insufficient to satisfy their infant's needs, and this, in turn, contributed, possibly in combination with anxiety, to reduce their milk production.

By not recognizing the socio-cultural role played by outpatient clinicians, families and neighbours in the genesis of the aetiology of IBM, we reduce the problem to a medically unexplained symptom with a potential psychosomatic basis. This pervasive, ambiguous and suspicious ontology attributed to IBM-subject mothers to potential negative clinical judgment or blame. By not recognizing that mothers who experience IBM need more active, continuous support from clinicians and their close ones, as well as coherent models of care, one sets the stage for mothers rapidly switching to formula and abandoning breastfeeding altogether. Our results suggest that contradictions in the discourses of the Kangaroo Mother Method setting and the home and outpatient settings *vis-à-vis*, the socio-cultural norms of infant-feeding practices generate social distress in mothers and cause them to experience IBM once at back at home. In our analysis, the social stress caused by conflicting values and the perception of the problem as a medically and culturally unexplained somatic problem constitute the main barriers to adherence to exclusive breastfeeding by the Brazilian mothers of premature infants in our study.

Conclusion

The social experiences of the mothers in our study lead us to believe that IBM is a socio-somatic problem. To achieve better infant health outcomes and reduce the high morbidity and mortality rates of premature babies in Brazil, health strategies in that country need to focus on nursing care beyond the

medical setting and in homes and communities. Health promotion activities should be provided to mothers, their families and neighbours and to outpatient clinicians, so that, mothers have continued access to support and can avoid conflicting discourse. Not only mothers, but also the entire family should be involved in infant feeding and at all stages of Kangaroo Mother Method.

Mothers' narratives *vis-à-vis* their IBM problem in the NICU correspond to what Van Esterik (1988, 1989) defines as a western biomedical conceptualization that places the ontology of breast milk as a nutritional product and fails to see breastfeeding as a relational activity integrated into daily social life. Dykes (2005, 2292) proposes that we reconsider breastfeeding as a 'complex relationship between mother and baby, the wider family, and the community'. Our results reconfirm the usefulness of this ontological position for the understanding of IBM. However, we also suggest that such a position should also involve taking into account the complex relationship between breastfeeding mothers and the systemic environment involving healthcare models and economic constraints.

Contrary to the epistemology of biomedicine, many traditional systems of healing in the world provide socio-somatic theories which recognize that aetiologies may lie within the social world (Kleinman & Becker 1998; Groleau & Kirmayer 2004). Such theories typically understand that the health and well-being of individuals are tied to the maintenance of social order. Having a premature baby and introducing a new infant feeding practice such as exclusive breastfeeding changes the social order and effects cultural change. Locating the aetiology of somatic problems, such as IBM in the social world, as opposed to the traditional individualistic mind/body dualism of Descartes, is a call for redress to better account for the complexity of the bodily experiences of motherhood and the socio-cultural change it entails.

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Conflicts of interest

None declared.

Key messages

- Insufficient breast milk cannot be reduced to psychosomatic or individualistic explanations but should be understood from a socio-somatic perspective.
- A socio-somatic perspective on the problem of IBM can provide knowledge that helps tailor interventions to socio-cultural realities.
- Not only mothers, but also the entire family should be involved in infant feeding and at all stages of the Kangaroo Mother Method.
- The CSM is a useful art-based method to understand the social context of the problems of IBM and low rates of exclusive breastfeeding in groups living in poverty.
- Health policy on Kangaroo MotherCare Method (KMM) should target enhancing continuity of care during the postnatal period that goes beyond the hospital discharge.

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