Queensland University of Technology
Brisbane Australia

This is the author's version of a work that was submitted/accepted for publication in the following source:

Gallegos, Danielle, Russell-Bennett, Rebekah, & Previte, Josephine (2011) An innovative approach to reducing risks associated with infant feeding : the use of technology. *Journal of Nonprofit and Public Sector Marketing*, *23*(4), pp. 327-347.

This file was downloaded from: http://eprints.qut.edu.au/46809/

© Copyright Taylor & Francis 2011.

This is a preprint of an article submitted for consideration in the [Journal of Nonprofit and Public Sector Marketing] © [2011] [copyright Taylor & Francis]; [Journal of Nonprofit and Public Sector Marketing] is available online at: www.tandfonline.com

Notice: *Changes introduced as a result of publishing processes such as copy-editing and formatting may not be reflected in this document. For a definitive version of this work, please refer to the published source:*

http://dx.doi.org/10.1080/10495142.2011.623504

An Innovative Approach to Reducing Risks Associated with Infant Feeding:

The Use of Technology

Dr Danielle Gallegos
School of Public Health
Queensland University of Technology
Victoria Park Road
Brisbane 4001
Phone: +61 7 3138 5799
Email: danielle.gallegos@qut.edu.au

Professor Rebekah Russell-Bennett
QUT Business School
Queensland University of Technology
George Street
Brisbane 4001
Phone: +61 7 3138 2894
Email: rebekah.bennett@qut.edu.au

Dr Josephine Previte
Faculty of Business, Economics & Law
UQ Business School
The University of Queensland
St Lucia Q 4072, Australia
Phone: +61 7 3346 8095
Email: j.previte@uq.edu.au

SOCIAL MARKETING INNOVATIONS SPECIAL ISSUE

This research was funded by the Queensland Government Gambling Community Benefit Fund. We would like to acknowledge the project team and the extensive involvement of Ms Robyn Hamilton, Director, Australian Breastfeeding Association and Mr André La Porte, from André La Porte Creative Communications. We would also like to thank Joy Parkinson for research assistance and the QUT Business School's Service Innovation Research Program.

Abstract

Infant feeding is a complex behavior enacted in a risk adverse society. Despite ongoing communication and education strategies, breastfeeding rates in countries like Australia, the US, and the UK remain static, thus increasing the risk of short and long-term health problems. Health professionals and non-profit organizations recognize social marketing as an appropriate strategy for increasing breastfeeding duration since it addresses the shortfalls of education-only campaigns. Technology as an innovative alternative to mass media and education has the potential to reduce the social price of breastfeeding by assisting women to manage the identity and health risks associated with infant feeding. This paper reports findings from six focus groups that explored the risks associated with breastfeeding and the potential role of technology in ameliorating these risks. A key finding of this research was that technology has the potential to negate the impact of perceived uncertainty and lack of control associated with breastfeeding. The results indicated that future breastfeeding campaigns that are innovative in their approach and use technology may be more effective in changing breastfeeding behavior.

KEYWORDS: Breastfeeding, social marketing, m-technology, innovation, risk, public health

INTRODUCTION

Failure to breastfeed can be considered risky behavior, both physically and emotionally. There are health risks for infants associated with not receiving breast milk, including increased infections, obesity, asthma, and diabetes. There are also risks to mothers' identity, with breastfeeding associated with being a "good" mother and any other form of infant feeding synonymous with being a "bad" mother. Consequently, any approach endeavoring to increase the number of women who breastfeed, and how long they breastfeed for (the "breastfeeding duration problem"), needs to take into consideration both the minimization of health risks for infants and identity risk for mothers. Social marketing, as a targeted behavior change and behavior maintenance strategy that focuses on consumer insight offering 'value' and counteracting the competition, fulfils these criteria.

There are three approaches to social change: education, law, and social marketing (Rothschild, 1999). Education and law are used extensively in the breastfeeding context, while social marketing has only recently been identified as a useful strategy. Legislation is useful to change the environments within which women have the opportunity to breastfeed, it cannot, however, be used to force mothers to engage in the behavior (Baker & Milligan, 2008; Li et al., 2004). Current neo-liberal approaches that value the right of a woman to make personal choices regarding health also preclude punitive legislative approaches. Education campaigns have been the dominant approach to achieving voluntary behavior change in the breastfeeding context, however, they are only effective when awareness levels are low (Rothschild, 1999). Research has indicated that most women in developed countries such as Australia, the United States of America, and the United Kingdom, are fully cognizant of the benefits of breastfeeding (Mitra, Khoury, Hinton, & Carothers, 2004). Continuing with a education dominated strategy is therefore unlikely to encourage behavior change (Kukla,

2006). This lack of progress is evident when considering that, despite the growing number of and high levels of government expenditure on breastfeeding awareness campaigns, breastfeeding rates in most industrialized countries remain stubbornly static. Kukla (2006, p. 162) argues, in the US context, that the ongoing search for more compelling breastfeeding messages "fails to examine or address the reason for this gap between message and behavior". In this paper, we argue that approaches to preventing breastfeeding cessation or maintaining breastfeeding practices need to rely less on the message and more on reducing the risks of breastfeeding as experienced and perceived by women. A social marketing approach, therefore, that explicitly includes consideration of goods or services rather than a reliance on communication has the potential to increase positive breastfeeding behaviors. New, innovative approaches to support women during breastfeeding challenges are therefore required, including trialing alternative channels of support that move beyond standard face-to-face expert advice given by health professionals. These new products and services also need to be re-conceptualized so that they are both cost-effective and personalized. In addressing the "breastfeeding duration problem", this approach also requires a shift in the dominant paradigm, from child-centered approaches (that is "you are protecting your infant") toward a mother-centered approach that is individualized, timely, and addresses the identity risk of mothers.

Mobile technology (m-technology), including mobile phones (standard, iphone, and android), global positioning units, and tablet personal computers, can be harnessed to deliver innovative alternatives to the traditional mass media approach but is under-used in social marketing campaigns and has not been used at all in influencing breastfeeding behavior. This paper fills a gap in knowledge by exploring m-technology as an innovative alternative to the traditional mass media approaches currently used in breastfeeding social marketing

campaigns. Many traditional media campaigns frame mothers as the “problem” and use a fear-based approach to engender behavior change. In this paper, we argue that by understanding the perceived risks as experienced by women, m-technology could be used to mediate these risks and provide tangible support.

An approach that positively supports breastfeeding behaviors is innovative because it suggests a pathway for a social marketing approach to breastfeeding that goes beyond just promoting the benefits of breastfeeding to embracing all elements of the marketing mix – product, price and place – to support actual breastfeeding experiences. Such approach offers an opportunity to create goods and services in a way that minimizes risk to both mothers and infants. However, in order to effectively tailor such a breastfeeding social marketing campaign, it is still unclear how women conceptualize this risk and whether technology would fulfill an active role in addressing this risk by supporting women’s infant feeding choices.

This paper provides a qualitative evidence base to encourage government and non-government organizations to be innovative in their breastfeeding social marketing campaigns. In positioning m-technology as a means to support women’s breastfeeding experiences, we discuss: the conceptualization of risk via contemporary social theory; the framing of breastfeeding as a problem; and the positioning of technology within this risk framework. We then address how a social marketing approach could innovatively ameliorate that risk in order to increase loyalty to breastfeeding behavior. Taking this lens to social marketing addresses a theoretical gap relating to the use of m-technology in reducing the cessation of complex desirable health behaviors. Specifically, we identify the risks of infant feeding, as perceived by mothers, and the innovative opportunities in social marketing for technology in

ameliorating these risks to achieve validation of infant feeding choice. The results also assist in potentially shifting behavior towards the breastfeeding gold standard – that is, extending the duration of breastfeeding to 6 months and more (World Health Organization, 2001).

BREASTFEEDING IN A RISK SOCIETY

Risk is an inherent part of the human condition; it has always been *a part* of everyday life - background noise to day-to-day activities that was not necessarily overt or within conscious thought. The key feature of the current epoch is that risk and its management now underpin *all* activity. So rather than being considered esoteric, occasional phenomena, risk has "entered deeply into our everyday lives" (Giddens, 1999, p. 52). Consequently, all facets of modern life are in some way governed by the assessment and concomitant reduction of risk at both a collective and an individual level (Beck, 1992; Giddens, 1991).

Growing uncertainty, "unsafety", unpredictability and ambivalence further characterize this notion of a "risk society" (Bauman, 1999). With contemporary life associated with the collapse of inherited norms, values, and customs, previously signposted by religion, family, tradition, and the like, individuals now experience dislocation, disintegration and disorientation. Health is one of the obvious areas in which individuals can act on themselves and indeed, in the current neo-liberal environments there has been a shift in blame – the individual is now held accountable. Individuals need to be self-reflective, self-regulating, and are required to make informed choices based on scientific fact in order to ensure a healthy life from womb to tomb (Coveney, 2006). Breastfeeding is one of those areas of health.

Breastfeeding has benefits for both infant and mother and is recognized internationally as the ideal means to feed an infant. The World Health Organization (WHO) recommends exclusive

breastfeeding to six months of age with continuation until the child is two years old (World Health Organisation, 2001). In public health circles, exclusivity, where an infant only receives breast milk and no other fluids in the first six months of life, is privileged as the gold standard (Binns, 2003; World Health Organisation, 2001). Breastfeeding reduces the incidence of infant mortality, helps to prevent gastrointestinal, chest, ear, and urinary tract infections as well as allergies in young children (Horta, Bahl, Martines, & Victora, 2007). Breastfeeding also decreases the risk of infants, children, and adolescents of being overweight or obese in childhood and into adulthood (Horta et al., 2007). Further, the life-course approach contends that the in-utero environment and early feeding of infants plays a role in the later development of chronic disease (Godfrey, Gluckman, & Hanson, 2010). Increasing the number of women who breastfeed their infants up to six months of age and beyond is believed to have an important impact on the future health of the population. While breastfeeding is recognized as a national and international goal, the onus is clearly on women or specifically mothers to feed their infants in such as way that maximizes their infants' potential and minimizes health risk.

In Australia, breastfeeding monitoring is limited, but recent figures from the Longitudinal Study of Australian Children indicate that only 14% of infants were fully breastfed at six months (Australian Institute of Family Studies, 2008), that is, received breast milk and other fluids excluding formula. Other data indicates that less than half of Australian infants (48%) receive any breast milk and only 18% are exclusively breastfed at six months (Australian Bureau of Statistics, 2003, 2006). This falls far below the Australian Government's 2003 target of 50% of infants exclusively breastfed at 6 months (Queensland Health, 2003). These rates are reflected in other developed countries with the USA, Canada, New Zealand, and the

United Kingdom all having similar or lower exclusive breastfeeding rates (Organization for Economic Co-operation and Development, 2009).

In this context, given that the majority of women start to breastfeed and that once stopped find it almost impossible to recommence, approaches need to be developed that maintain high levels of the behavior or that prevent its cessation. Although breastfeeding is a short-term behavior (according to WHO recommendations lasting up two years per child), the impact of social and cultural norms and the development of self-efficacy, after reflection, and the management of risk, are critical in influencing breastfeeding behavior.

In this environment, the maternal body is particularly "risky", in that women negotiate not only physical and nutritional risk, which extends to their children, but also identity risk. The moral and social responsibility that accompanies risk management means that mothering practices in the context of culturally legitimized norms account for "good" and "bad" mothers (Lee, 2008; Lee, Macvarish, & Bristow, 2010). Infant feeding, and its associated risk, thus becomes crucial to maternal identity, and women need to work hard to maintain their status as "good" mother regardless of feeding mode (Lee, 2008; Lee, Macvarish, & Bristow, 2010; Schmied & Lupton, 2001). For breastfeeding women who are perceived as responsible for themselves and their infants, the creation of an identity that revolves around infant feeding can result in anxiety, especially when their identities as mother are called into question. This occurs through challenges by media and community surveillance which questions their infant feeding choices and when they are unable to successfully breastfeed. Consequently, breastfeeding public health messages which focus on this identity, no matter how carefully constructed, will always polarize women into pro-breastfeeding and anti-breastfeeding groups.

Another key feature of the risk society is that consumers are required to become “experts of themselves” and are expected “to adopt an educated and knowledgeable position of self-care in respect to their bodies, their minds, their forms of conduct, and that of the members of their own families” (Rose, 1996, p. 59). This process of self-realization involves decision-making and risk appraisal in order to construct the self as a “responsible citizen” (Petersen, 1996, p. 55), which, in this case, is “responsible mother” equating to “breastfeeding mother”. The net result of these processes is a proliferation of ”experts” because as Douglas (2001) proposes, “Experts cannot be experts of everything”, and as such, the more knowledge that is circulated about a field, the less agreement exists within that field. According to Douglas (2001,p. 146), “The more indiscriminately a sensitive topic is opened to debate, the more intractable it is bound to become. The more the technical aspects are opened up to non-experts, the less the hope of ever coming to a decision on policy.”

In the case of breastfeeding, women are relying less on their own “expertise” and increasingly on external experts to ameliorate their risk. The onus lies with mothers to enter into partnerships, not only with public authorities and experts, but also with lay actors, in order to identify and learn how to minimize or eliminate risk (Knaak, 2010; Lupton, 1999). In the breastfeeding context, women who previously turned to family members now have to choose between an array of health professionals (doctors, midwives, lactation consultants, dieticians), peers and peer organizations, manufacturers of infant products, and others. This complexity results in key features of the risk society – that is, a heightened sense of uncertainty generated, in part, by the proliferation of experts and the evidence base from which they draw. These features, therefore, need to be taken into account when designing social marketing campaigns that attempt to influence breastfeeding behavior.

BREASTFEEDING CAMPAIGNS

To date, marketing in the breastfeeding area in Australia has been largely limited to traditional media campaigns with tag lines such as: *Breastfeeding: Every Month is a Bonus* (Government of South Australia, 2010); *12months + on the Breast: Natural, Normal, Healthy* (Queensland Health, 2010); and in the United Kingdom, *Breastfeed: Be a Star* (Breastfeed Be A Star, 2008). Some governments are exploring the integration of online support networks, such as Facebook and blogs, with more traditional access to written information (see for example, Ministry of Health: New Zealand, 2011). These media campaigns effectively publicize the recommendation of "experts", creating an environment of "insiders" – breastfeeding mothers - and "outsiders" – those who do not breastfeed. These campaigns have effectively transformed a set of beliefs (albeit backed up by scientific evidence) into certainties, setting up the norms of judgment and shutting out the non-believers, who in this case are the formula-feeders. In this way, they create a level of certainty about what is and what is not acceptable behavior. The use of m-technology and other social media, however, enables both formula-feeders and breastfeeders, to access information from formal institutions and from informal, experiential accounts (such as women sharing their personal experiences of feeding) to validate their choices (either breastfeeding or other). These other sources subvert the certainty created by the campaigns and enable women to continue their respective behaviors with minimal risk to their maternal identity.

PERSONAL TECHNOLOGY CONNECTIONS

M-technology is increasingly used by consumers to extend and manage relationship connections with their selected "experts", as well as to gather information and marketing

offers, anytime, anywhere, and to receive instant rewards. The speed of modernity promotes ever-increasing attempts to shore up ever-weaker social bonds. Elliott (2007, p. 50) remarks that "people now drift from one episodic encounter to the next, seeking to nail down a sense of identity – however provisional or fleeting…. reaching for mobile phones, addictively texting, surfing the Net, flitting from one chat room to another; speed dating, moving ever faster between relationships". Yet, in an era of heightened risk perception and uncertainty there is a requirement for quantities of relationships – as long as there are enough people to call on in times of trouble, the quality is not necessarily important. The onus for the quality of the relationship falls back on the service and it becomes necessary to provide easy access to quality "point of purchase" or in this case "point of behavior" goods and services.

It was decades ago that real-time conversational interaction at a distance, facilitated by landline telephones, dramatically changed how people lived their lives and shared intimacy at a distance (Hutchby, 2001). More recent changes, perhaps of a similar magnitude, offer mobilization not only of conversation, and style of communication (i.e., Short Message Service or SMS), but also an array of computer supported social interactions. For social marketers, this alternative mobile platform has the potential to influence peoples' behavioral preferences and provide new modes of social support that exploit alternative connections between consumers, organizations, and resources that help behavior monitoring.

The use of mobile phones as personal communication devices that reinforce bonds and sustain relationships between family and friends has been extensively researched by communication theorists and sociologists (e.g., Katz and Aakhus, 2002). In theorizing about the self, Turkle (2008) explains that the self is tethered to others through "always-on/always-on-us" technologies. Our devices become a badge of our networks, and the self inhabits a

luminal space between the physically real and the “tethered self”. Tethering enables individual identity expression and includes the experience of network connections as both sustaining and constraining (e.g., the benefit and constraint of mobile ‘check-ins’). At the same time, the device opens users’ connections not only to friends, family, and colleagues, but also to websites, and human and machine based social networks.

In considering the machine-human interaction network, Eckles’ (2007, p. 146) view of mobile persuasion is founded on this transformation of the self to a “tethered self”. He argues that mobile persuasion is embodied in a variety of experiences, not just symbolic persuasive messages. Furthermore, he suggests that mobile persuasive technologies create persuasive faculties – new senses and reasoning abilities that are designed to change attitudes and behaviors. For example, in *Texting 4 Health*, Fogg (2009) proposes the view that the characteristics of mobile phones make them useful for delivering health related services because they are: *personal* (facilitate targeted, individualized applications); *portable* (always-on/always-on-us); *connected* (human-2-human; human-2-machine; machine-2-human); and *intelligent* (handsets increasingly approximate micro-computers). Different social and health issues can be addressed by exploiting these unique characteristics. The mobile phone platform has previously been used to address issues such as weight management, physical activity, sexual health, and nutrition education. In terms of providing an evidence base for innovation in health, these new communication and self-monitoring technologies promise further insights into the documentation and understanding of complex health behaviors. Currently, however, there is little theoretical understanding of how consumers use these technologies to explicitly address perceived risks in social behaviors.

M-technology have a persuasive role in the private and intimate everyday lives of people, which situate such technology purposefully in a healthcare frame, fitting in with the risk society's increasing focus on individual responsibility for health care outcomes. Health strategies, such as social marketing, that focus on behavior change and reinforcement are ideally suited to m-technology's mode of operation. Not all services, or health services, will or can migrate to the mobile platform. However, the mobile offers unique opportunities for "technology-enhanced social interactions" that promote positive health behaviors (Fogg, 2007, p. 9). In outlining the promise of mobile persuasion, Fogg (2007, p. 5) claims mobile phones will "rule the persuasion universe" because they: have a heart (we love our mobile phones), a wristwatch (they are with us always), and a magic wand (these devices have many capabilities).

In this paper, we use the context of breastfeeding to explore how women define and negotiate risk and how technology might be used to ameliorate that risk. We propose that innovative leveraging of m-technology, to support infant feeding, has the potential to bridge public-private spaces, individualize strategies to enhance behavior maintenance or prevent behavior cessation and provide personalized support. Building an evidence base on consumer acceptance and risk perceptions will make an important contribution to social marketing practice, as marketers need new ideas and insights into women's breastfeeding experiences and risk assessment so that they can more appropriately design marketing and technology solutions that support breastfeeding recommendations.

METHODOLOGY

Focus groups were used to collect data prior to the development of a mobile phone breastfeeding intervention. Women over the age of 18 years, who had been directly involved

in the feeding of infants, were recruited via childcare centers in and around Brisbane, located in south-east Queensland, Australia. Centers were purposively sampled to ensure a range of women from diverse socio-economic backgrounds took part in the study. Women from lower socioeconomic groups are typically difficult to access and childcare, due to the introduction of government subsidies in Australia, is now an affordable option for women from a range of backgrounds. Childcare centers were selected from low, medium, and high socioeconomic suburbs using the Socioeconomic Index for Advantage (SEIFA) (Australian Bureau of Statistics, 2008, p. 5). This index takes into consideration a range of factors including income, education, and home ownership to classify localities as advantaged or disadvantaged. Centers were offered a small financial donation, based on the number of women attending, for participating in recruitment and hosting the focus group.

Prior to the commencement of the focus group, women were asked to complete the consent for participation and undertake a survey which collected demographic details and their use of mobile technologies. Each focus group took between 60 and 90 minutes and included questions related to women's experiences of infant feeding, the social support networks they relied upon, their response to the current media campaigns around breastfeeding, and how they used mobile technologies. Each woman received a sample bag of appropriate items (approved by the Australian Breastfeeding Association) as a gift for participating. Forty-one women, from six childcare centers, participated in the focus groups. The women ranged from 20 to 46 years old, and most had post high-school qualifications. Three of the source childcare centers were located in suburbs with low SEIFA scores (deciles 1-4), two were located in suburbs with moderate SEIFA scores (deciles 5-7), and one was located in a suburb with a high SEIFA score (deciles 8-10).

Two of the researchers thematically analyzed qualitative responses using a grounded theory approach. The researchers attained agreement on divergent themes through an iterative process of negotiation. The analysis process began with the development of open coding, noting patterns and themes, and then moved to axial codes, identifying sub-categories, before moving to a process of selective coding, whereby core themes relating to risk and technology were specified (Liamputtong & Douglas, 2006). All names used for participants in this paper are pseudonyms.

DISCUSSION: WOMENS' CONCEPTUALIZATION OF RISK

The women comprised three distinct groups: those who successfully breastfed, those who defaulted to formula feeding after unsuccessfully breastfeeding, and those who chose to formula feed. However, the themes relating to risk and technology transcended these behaviors and are, therefore, relevant to mothers regardless of the method of infant feeding. Specifically, the women saw technology as a modality that could potentially ameliorate risks associated with identity and infant feeding, as well as the risks associated with the more technical, practical aspects of breastfeeding. The use of technology appears to provide women with expanded choices for identifying, nominating and connecting with "experts" in both the health profession and the general community. The opinions expressed by women in the focus groups about technology also revealed that it also provides a means for the personal validation of choices.

Identifying Risk in Breastfeeding

Using risk as the primary framework, a number of key themes emerged from the focus groups, many of these revolved around identifying "experts" and the tension between different forms of expertise. Contributing to this quest for expertise were the concepts of

"choice" – breastfeeding feels like the only option; "truth" – breastfeeding is hard to do and it hurts; and "self worth" – if you cannot breastfeed then you have failed. These themes all interact with the women's quest for certainty that can be used to argue a moral position that ensures the protection of identity by moderating risk, regardless of context.

Identifying the Expert

In identifying and managing risk, women needed to identify an array of experts. Women recognized many types of "experts", with the two predominant ones being "health professional" and "mother". In the focus groups, it was evident that women had internalized the "breast is best" message and was conscious of public surveillance over their infant feeding choices. The "breast is best" mantra was a strong backdrop against which women in the focus groups compared themselves and provided a rationale for their current behavior.

As explication of the risk society shows us, "expert" knowledge needs to be drawn on in order for individuals to take responsibility for their own behavior and in this case the duty of care extends to their infants. In order to ensure they are undertaking the "right" behavior, women need to seek out experts. The internalization of breastfeeding as the preferred infant feeding method and the sense of failure for women unable to breastfeed were clearly evident in the experiences disclosed by women in the focus groups:

> I love bottle feeding, I really do, but I'm so envious of all of my friends because it tends to be that all the mothers I know and all of my friends happily breastfeed. And they just do it so naturally and… I just kind of…I do wonder and the thought does enter my mind, like what is wrong with me, why can't I breastfeed? (Frances, Richlands)

> … breastfeeding is the best, these are best, these are best…of course we all know it's the best, but I just couldn't and then when my kids… stopped at 2… not even 3 months, again I felt like a failure you know. (Sally, Clontarf)

Despite the clear socially sanctioned preference for breastfeeding, there was also acknowledgement that the public health message is an "opinion" and that there are other positions that could be equally valid. In other words, some of the women participating in the focus groups called into question the supremacy of the public health messages as **the** expert advice.

> So I think this whole sort of forcing a singular opinion – because it is you know… an opinion and there are lots of… differences with mothers with all of our different situations and I think we're just judged so much of the time, just to put another judgment out there, another sort of scenario where it's… good mum – bad mum. (Jane, Newmarket)

Womens' access to a range of experts, that could be deployed for a specific purpose and to a larger body of information means that women were cognizant of their choices. Any attempt to limit that choice was viewed negatively. It should be noted that most public health breastfeeding campaigns identify exclusive breastfeeding as the **only** choice.

> So yeah the World Health Organization sticks in my head when I look at things like that and I'm not fond of them because they don't give choice. They give dogmatic attitude as far as I'm concerned. (Lana, Newmarket)

Despite the negative perception of the public health message, health professionals were still highly regarded as the "keepers of knowledge", with women actively seeking out experts in the form of lactation consultants and midwives to assist them to breastfeed. Overwhelmingly, however, women were frustrated by the lack of certainty they offered.

> Every single midwife told me how to do it differently. Not one midwife could tell me how to latch on the same way as the one before. (Dana, Richlands)

Women acknowledged that they actively sought out health professional advice, but given the lack of certainty, the relationship with such "experts" was tenuous and as a result, managing their breastfeeding behavior and ultimately their risk, was more difficult to enact. Trust is a positive expectation towards competence in cases of uncertainty and lack of control, where, in many cases, the seeker believes that "another has a duty to react in a certain way" (Meijboom, 2007, p. 237). The failure of "experts" to believe mothers when it came to their infants tested these bonds of trust and would often result in women seeking information from other sources. These quotes from two of the women highlight the fragile nature of the relationship with established experts:

> I breastfed my little boy to 9 months, but he had really severe reflux right from the beginning…not crying though. Apparently it was very bad reflux, but he's just a happy kid so… but he gained weight really badly because he was vomiting a lot and no-one would listen to me because reflux [is] normally just a little amount, but he would vomit his entire feed. But no-one would believe me unless he actually did it in front of them, which of course he never did. (Cathy, Richlands)

> I tried explaining to every nurse that would listen that my son didn't feed… it took 3 months of expressing to get him to finally attach. He was acting like a 34 week old baby. Told them the whole story…no-one would listen. They just wouldn't listen; they wouldn't get me a lactation consultant and I was just like you want to me to [breast] feed [and] you give me attitude when I say fine I'll just put her on the bottle – [but] you're not being consistent in helping me do what you want me to do. (Francis, Birkdale)

The saliency of risk for these women is also noted, particularly when they were denied access to experts because they had not been identified as being "at risk".

> It's this thing like with the government… if you're not a particular demographic which none of us fit into… second time you don't get any help. Like I was told by the hospital, don't bother going to your local child health place because you earn too much, they're not interested in you, they're interested in the at risk babies. (Phyllis, Birkdale)

Control and choice in breastfeeding

The women recounted a variety of experiences related to breastfeeding. Some women perceived the decision to breastfeed as their own, and this was reinforced by significant others. Other women, however, described scenarios where they had lost control over the infant feeding decision.

> My mum's a midwife… old school. She didn't pressure me, she said you know it is your choice, but breastfeeding is best. (Debbie, Clontarf).

> She took my baby and gave him a bottle of milk without my permission, without my knowledge. She came back and said: "right, he should stop crying for a while". I mean… I didn't want that. I didn't mind the sleep, but I mean I was going through all this effort pumping and everything else, and then to give him milk, it like totally defeated the purpose and I was [feeling] horrible. (Dana, Richlands)

With women previously identifying the importance of a choice with respect to infant feeding methods, the perceived loss of choice has ramifications for women's sense of identity, increasing the risks associated with being perceived as a "good" or "bad" mother. Removal of this choice, reduces the opportunities for women to demonstrate their position as a responsible citizen, in turn, creating self doubt and the increasing need to turn to identified experts (Petersen & Lupton, 1996).

Thus, there is recognition amongst women that the "cost" of breastfeeding in terms of identity and infant health is high. When women perceive little choice and control over

feeding behavior, it is likely they will have reduced motivation towards breastfeeding. This reduced motivation in combination with a lack of perceived opportunity will reduce engagement with the behavior (Rothschild, 1999). Any social marketing campaign aiming to influence breastfeeding needs to consider the minimization of the social price of breastfeeding in order to make breastfeeding a more attractive option than formula feeding.

Truth and the Reality of Breastfeeding

The women clearly identified the gap between the idealized nature of breastfeeding, as presented in media communications and the reality. The women almost unanimously identified the experience of breastfeeding as painful in the first six weeks. The experts consistently denied this reality, reinforcing self-doubt by equating pain with failure. In other research, the linking of pain with failure reduces confidence and increases the likelihood of breastfeeding cessation (Dennis, 2006).

> They say that…they reckon it's hurting because you're doing wrong. That's what they say to you. (Harriet, Richlands)

> Unfortunately, I was unsuccessful with breastfeeding, but I tried as hard as I could and it was the most painful thing I've ever done. But I'm really glad that I gave it a go and unfortunately, I didn't have the milk. (Frances, Richlands)

> It always surprised me how, as everyone else has said, how difficult and how painful the breastfeeding process is and maybe people don't want to tell prior because you know it will spoil the mystique of motherhood or something. But

> you know… I think it is very important for new mothers who haven't breastfeed before that they have someone there saying: "look it's okay, it's hard". My sister-in-law is a midwife and she actually tried to breastfeed… and also had difficulties, and she said she thinks it really softened her up for her professional life having been there. (India, Richlands)

Self and the Identification of Worth

The women recognized **any** breastfeeding as the "gold standard" (rather than exclusive breastfeeding) not only for their infants, but also for themselves. The women have internalized the social norm, constantly monitoring themselves and aspiring to reach the ideal. In a risk society, the self is reflexive, a project that is never completed, ensuring a continued quest for self-improvement (Giddens, 1991). This being the case, the women used the language of perseverance and failure to describe their experiences. The intrinsic link between self worth and the failure to breastfeed creates heightened anxiety and potentially creates a vicious cycle whereby milk production decreases as stress increases (Lawrence & Pane, 2007).

> So I'll try again next time… I'll **persevere**. I think it's worth a go, but I don't **think I'm any less of mother** because I bottle fed him, as opposed to breastfeeding, but it would have nice…I tried [and] failed…people have no idea though…they don't. (Barbara, Richlands, *emphasis in bold added*)

> I did feel a little bit sort of threatened by some things and not doing it right. I don't know what to do to help me out. (Tracey, Clontarf)

Using Technology to Ameliorate Risk

Korthals and Komduur (2010) argue that citizens need strategies for dealing with or selecting between uncertainties to ameliorate risk and to validate an identity (in this case being considered a "good" mother regardless of the choice of infant feeding) in a constantly changing environment. Without any general tools or guidelines to deal with the process of selection between uncertainties, individuals are left undergoing constant ruminations that do not necessarily offer viable solutions. These ruminations include "consultations, deliberations, and exchange of stories or life narratives" (Korthals, 2008, p. 445). Technology assists in reducing uncertainty in two ways. Firstly, as a source of information and secondly, as an interactive support mechanism that allows the ruminations to take place (Lefebvre, 2009). Technology assists in reducing risk by providing: personalized, controlled connectivity; validation of choices; and an increase in the number of experts identified as credible.

Personalized, Controlled Connectivity

Interactive technologies do not take the place of face-to-face relationships, but provide a useful adjunct which operates in a space that is not private nor wholly public. These technologies provide a safe inter-penetration of private and public, allowing the presence of others, "who see what we see and hear what we hear, to assure us of the reality of the world and ourselves" (Arendt, 1958, p. 50).

The women are not required to publically admit guilt or failure in their interaction with these technologies, enabling them to retain a sense of self-worth and confidence. In addition, they can use the technologies to control the depth and frequency of the relationships between themselves and other "experts". The women are in control of both sending and receiving

information, leading to the use of that information when and where appropriate. In describing their use of technology, the women discussed their ability to control their interactions.

> But I think the internet is my best friend… in the middle of the night… when you're sad and sorry and everybody has their opinion about what you're doing and how you are as a mother, you jump on the internet and you Google it, and then you read up and you just make an educated decision about the information that you have in front of you. (Frances, Richlands)

> But with a [text] message you know they're going to get… like you know they're going to get it eventually, whereas if you call them and they don't answer you've got to leave a message…you don't know if they'll get the message. At least with a text, you know they're going to get [it] eventually. (Rachael, Birkdale)

> I prefer texting than talking to someone. It's easier to be brief. Yeah and you just say what you want to say. And I think it's less intrusive as well… like if … I don't know what my friends with kids are doing, I can send them a text to ask them a question. (Martha, Newmarket)

Validation of Choice

Tethering to technologies enables women to validate the choices they have made by providing wider, personally controlled access to "experts". The technologies provide a public space in which the women can control the perception of their identity. The women are no longer "insiders" or "outsiders", but rather, have equal access to support that is consistent

with the choices they have made, regardless of whether this choice is perceived to be within or outside their control. These three women describe accessing information, controlling the relationship, and being in a judgment-free zone as all benefits of using technology:

> All the information that I got my hands onto was through the internet. It's basically just a friend's word of mouth – just what my friends told me [about] their experiences, which were all happy and wonderful, and then just everything on the net… especially blogs, I read a lot of blogs so …just what other mothers say works. (India, Richlands)

> But that's not confrontational. You can just go no I'll reply later, you don't have to reply until later, or you can delete and not reply, the power is left up to you. (Debbie, Birkdale)

> You can ask anything and that person is not going to laugh at you. (Karen, Clontarf)

Credibility of Experts

Technology also provides the women with the ability to select which experts they give credence to in order to reinforce their identity expression (Rose, 1992). This ability to go beyond family, friends, and colleagues allows women to reclaim power over their choices. However, the women still require their "experts" to have some form of credibility, be it professional or experiential. This need to balance certainty and uncertainty from multiple sources has previously been identified by Korthals and Komduur (2008). In exploring the

possibility of using m-technology and texting as a primary support service, the women were able to articulate their need for source credibility.

> It would depend on the integrity of the organization. (Cathy, Richlands)

> Well I'm very process orientated, so I'd so want to know who was sending me the text message, what was the expectation, was there an expectation I'd respond or is it just good will towards me or… like if you knew something about the organization. (Tiffany, Richlands)

> So if I knew something about the organization, I would kind of want to know…as you said like the Australian Breastfeeding Association office is staffed by volunteers with their own views and whatever so…so I might have one response to getting texts from something like that as opposed to if it was a State funded health department initiative saying you know we're going to be in touch with mums… so it would depend entirely on the context of the initiative and how it was funded and what the expectations were. (Candice, Richlands)

IMPLICATIONS FOR SOCIAL MARKETING PRACTICE

The use of technology in public health is an emerging area of practice and Lefevbre (2007) contends that the social nature of the media is reframing the connection with the consumer and creating an environment where the consumer can talk back. Online and mobile technologies are a vehicle of delivery or distribution, but they can also be used to address all

the elements of the marketing mix. Mobile phones, in particular, are an "always-on, two-way communication channel, a signal or cue for action, a resource of instant access to health information, a tool for social support…" (Lefebvre, 2009, p. 494). These two critical features – relevant information and support – are key challenges of breastfeeding that m-technology can be used to address. To date however, social marketers have done little to investigate the use of alternative, technology mediated service delivery channels to assist improving breastfeeding behavior. Evidence from this research indicates women are ready and interested in using m-technology to help them manage their infant feeding and specifically to assist with breastfeeding behaviors. Combine this consumer interest in technology solutions with the increasing costs associated with the provision of personalized face-to-face professional support service and women's desires for judgment-free consultation, technologies such as text messaging campaigns, self-help apps and monitoring programs, and other social media solutions will be in demand.

In other health areas, campaigns are embracing innovative approaches that exploit consumers' desires to manage their health goals and engage with m-technology that helps them monitor their health challenges. To date, social marketers and health professionals involved in the management of women's breastfeeding behaviors remain wedded to a reliance on standard mass media campaigns that fail to embrace the flexibility and creativity of marketing mix options which can deliver value to infant feeding mothers by using m-technology platforms. As breastfeeding rates are static and below recommended international and national standards, it is imperative that social marketers develop innovative programs that aim to support breastfeeding behavior.

Social marketers can exploit women's interests in m-technology as a means of engaging a new exchange relationship, based on designing engaging mobile experiences that encourage, support, and empower women to manage their own health and that of their children within a neo-liberal, risk society context. Taking this approach to the "breastfeeding duration problem" also gives social marketers an new opportunity to engage with women in a positive marketing exchange and potentially opens an opportunity to development empowering, longer-term relationships. For example, a government health department might leverage a SMS campaign that focuses on supporting breastfeeding choices, with a healthy nutrition smart phone app. In opting-into this campaign, women could choose to retain membership as their children develop and use the connection as an important channel for communicating with experts for advice and information. Taking this view to technology addresses a central goal of social marketing; that is, to engage in marketing exchanges that create sustainable, long term relationships that have social value.

CONCLUSION

This paper has provided evidence of how women perceive the "risks" associated with breastfeeding and their use of experts to ameliorate this risk. It has also highlighted that in the current risk society, technology that facilitates the building of social relationships has the potential to manipulate the marketing mix in innovative ways.

Breastfeeding is an exemplar of a desirable, relatively short-term behavior where there are imperatives for the continuation of that behavior for the long-term and where behavior cessation could have significant ramifications. Other examples could include safe sex, healthy eating, and recycling, although these behaviors are potentially more long-term in their

reach. Breastfeeding is unique however, in that once stopped, it cannot usually be recommenced and thus, there is a small window in which influence can be exerted. Social marketers can use this knowledge to develop technologically driven services that offer support for maintaining complex behaviors, while reducing social price. That is, the ready accessibility of m-technology provides immediate access to services and social support in a convenient manner that the recipient can control and personalize. Finally, the technology not only provides the service, but also facilitates the promotion of the service. Leveraging technology to facilitate behavior change therefore has implications for all aspects of the marketing mix**.**

This paper provides a clear evidence base for the development and implementation of m-technology in addressing breastfeeding behaviors. If campaigns are going to resonate with women, they need to reduce the social price of breastfeeding rather than polarize them into a particular infant feeding position which they feel impelled to justify. Technology promises to deliver this with the ability to position the product (experts) in such a way that the relationship is controlled by the recipient and that privacy is maintained. Women do not have to admit failure nor do they need to be embarrassed by a public admission of being unable to perform an act considered universally to be “natural”. The price for breastfeeding becomes much more attractive.

In bringing together social theory, social marketing, and public health nutrition, we have demonstrated that m-technology will be essential to ensure that all women can establish and continue breastfeeding if they so choose.

Acknowledgements

This research was funded by the Queensland Government Gambling Community Benefit Fund. We would like to acknowledge the project team and the extensive involvement of Ms Robyn Hamilton, Director, Australian Breastfeeding Association and Mr André La Porte, from André La Porte Creative Communications. We would also like to thank Joy Parkinson for research assistance.

REFERENCES

Arendt, H. (1958). *The human condition*. Chicago: Chicago University Press.

Australian Bureau of Statistics. (2003). Breastfeeding in Australia, 2001 (ABS Cat. No. 4810.0.55.001 ed.). Canberra: ABS.

Australian Bureau of Statistics. (2006). National health survey: Summary of results, Australia. Canberra: Australian Bureau of Statistics.

Australian Bureau of Statistics. (2008). Census of population and housing: Socio-Economic Indexes for Areas (SEIFA), Australia - Data only.Retrieved 13 July 2009, from http://www.abs.gov.au/ausstats/abs@.nsf/mf/2033.0.55.001/

Australian Institute of Family Studies. (2008). Growing up in Australia: The longitudinal study of Australian children, Annual Report 2006-07. Canberra.

Baker, M., & Milligan, K. (2008). Maternal employment, breastfeeding, and health: Evidence from maternity leave mandates. *Journal of Health Economics, 27*(4), 871-887.

Bauman, Z. (1999). *In search of politics*. Cambridge: Polity Pres.

Beck, U. (1992). *Risk society: towards a new modernity* (M. Ritter, Trans.). London: Sage.

Binns, C. (2003). Encourage and support breastfeeding. In N. H. M. R. Council (Ed.), *Dietary Guidelines for Children and Adolescents in Australia* (pp. 1-15). Canberra: Commonwealth of Australia.

Breastfeed Be A Star. (2008) *Breastfeed be a star*. Retrieved February 20th, 2011 from http://www.beastar.org.uk/

Coveney, J. (2006). *Food, morals and meaning: The pleasure and anxiety of eating*. London: Routledge.

Dennis, C.L. E. (2006). Identifying predictors of breastfeeding self-efficacy in the immediate postpartum period. *Research in Nursing & Health, 29*(4), 256-268.

Douglas, M. (2001). Dealing with uncertainty. *Ethical Perspectives, 8*(3), 145-155.

Eckles, D. (2007). Redefining persuasion for a mobile world. In B. J. Fogg & D. Eckles (Eds.), *Mobile persuasion: 20 Perspectives on the future of behavior change* (pp. 143-149). Standford, CA: Stanford Captology Media.

Elliott, A. (2007). The theory of liquid modernity: A critique of Bauman's recent sociology. In A. Elliott (Ed.), *The Contemporary Bauman* (pp. 46-62). London: Routledge.

Fogg, B. J. (2007). The future of persuasion is mobile. In B. J. Fogg & D. Eckles (Eds.), *Mobile persuasion: 20 Perspectives on the future of behavior change* (pp. 5-11). Standford, CA: Stanford Captology Media.

Fogg, B. J. (2009). Why texting 4 health? In B. J. Fogg & R. Adler (Eds.), *Texting 4 health: A simple, powerful way to change lives*. Stanford: Captology Media.

Giddens, A. (1991). *Modernity and self identity: Self and society in the late modern age*. Stanford: Stanford University Press.

Giddens, A. (1999). *Runaway world: How globalization is reshaping our lives*. New York: Routledge.

Godfrey, K. M., Gluckman, P. D., & Hanson, M. A. (2010). Developmental origins of metabolic disease: life course and intergenerational perspectives. *Trends in Endocrinology & Metabolism, 21*(4), 199-205.

Government of South Australia, S. H. (2010). SA Breastfeeding Campaign Retrieved April 11th 2011, from http://www.healthpromotion.cywhs.sa.gov.au/Content.aspx?p=111

Horta, B., Bahl, R., Martines, J. C., & Victora, C. G. (2007). Evidence on the long-term effects of breastfeeding *systematic reviews and meta-analyses*. Geneva: World Health Organization.

Hutchby, I. (2001). *Conversation and technology:Ffrom the telephone to theIinternet*. Cambridge: Polity.

Katz, J. E., & Aakhus, M. (Eds.). (2002). *Perpetual contact: Mobile communication, private talk, public performance*. Cambridge: Cambridge University Press.

Knaak, S. J. (2010). Contextualising risk, constructing choice: Breastfeeding and good mothering in risk society. *Health, Risk & Society, 12*(4), 345-355.

Korthals, M. (2008). Ethical rooms for maneuver and their prospects vis-a-vis the current ethical food policies in Europe. *Journal of Agricultural and Environmental Ethics, 21*, 249-273.

Korthals, M., & Komduur, R. (2010). Uncertainties of nutrigenomics and their ethical meaning. *Journal of Agricultural and Environmental Ethics, 23,* 435-454.
Kukla, R. (2006). Ethics and ideology in breastfeeding advocacy campaigns. *Hypatia, 21*(1), 157-180.
Lawrence, R. M., & Pane, C. A. (2007). Human breast milk: Current concepts of immunology and infectious diseases. *Current Problems in Pediatric and Adolescent Health Care, 37,* 7-36.
Lee, E J.., Macvarish, J., & Bristow, J. (2010). Risk, health and parenting culture. *Health, Risk & Society, 12*(4), 293 - 300.
Lee, E. J. (2008). Living with risk in the age of 'intensive motherhood': Maternal identity and infant feeding. *Health, Risk & Society, 10*(5), 467 - 477.
Lefebvre, R. C. (2009). Integrating cell phones and mobile technologies into public health practice: a social marketing perspective. *Health Promotion Practice, 10,* 490-494.
Lefebvre, R. C. (2007). The new technology: The consumer as participant rather than target audience. *Social Marketing Quarterly, 13,* 31-42.
Li, R., Hsia, J., Fridinger, F., Hussain, A., Benton-Davis, S., & Grummer-Strawn, L. (2004). Public beliefs about breastfeeding policies in various settings. *Journal of the American Dietetic Association, 104*(7), 1162-1168.
Liamputtong, P., & Douglas, E. (2006). *Qualitative Research Methods*. Melbourne: Oxford University Press.
Lupton, D. (1999). *Risk*. London: Routledge.
Meijboom, F. L. B. (2007). Trust, food, and health. Questions of trust at the interface between food and health. *Journal of Agricultural and Environmental Ethics, 20,* 231-245.
Ministry of Health: New Zealand. (2011). Breastfeeding Retrieved April 11th 2011, from http://www.moh.govt.nz/breastfeeding
Mitra, A. K., Khoury, A. J., Hinton, A. W., & Carothers, C. (2004). Predictors of breastfeeding intention among low-income women. *Maternal and Child Health Journal, 8*(2), 65-70.
Organization for Economic Co-operation and Development. (2009). OECD Family Database: CO3 Breastfeeding Rates *OECD - Social Policy Division - Directorate of Employment, Labour and Social Affairs*.
Petersen, A. (1996). Risk and the regulated self: the discourse of health promotion as politics of uncertainty. *Australia and New Zealand Journal of Sociology, 32*(1), 44-57.
Petersen, A., & Lupton, D. (1996). *The new public health: Health and self in the age of risk*. London: Sage.
Queensland Health. (2003). Optimal infant nutrition: Evidence based guidelines 2003-2008. Brisbane: Queensland Health.
Queensland Health. (2010). 12 months + on the breast resources Retrieved April 11th 2011, from http://www.health.qld.gov.au/breastfeeding/bf_duration.asp
Rose, N. (1992). Governing the enterprising self. In P. Heelas & P. Morris (Eds.), *The values of the enterprise culture: The moral debate* (pp. 141-164). London: Routledge.
Rose, N. (1996). Governing advanced liberal democracies. In A. Barry, T. Osborne & N. Rose (Eds.), *Foucault and political reason: Liberalism, neo-liberalism and rationalities of government* (pp. 37-64). London: University of College of London Press.
Rothschild, M. L. (1999). Carrots, sticks and promises: a conceptual framework for the management of public health and social issue behaviors. *Journal of Marketing, 63,* 24-37.
Schmied, V., & Lupton, D. (2001). Blurring the boundaries: breastfeeding and maternal subjectivity. *Sociology of Health & Illness, 23*(2), 234-250.
Turkle, S. (2008). Always-on/always-on-you: The tethered self. In J. E. Katz (Ed.), *Handbook of mobile communication studies*. Cambridge, MA: MIT Press.
World Health Organization. (2001). Report of the Expert Consultation on the Optimal Duration of Exclusive Breast Feeding Retrieved July 21st, 2011, from http://www.who.int/nutrition/publications/infantfeeding/WHO_NHD_01.09/en/index.html