Social Science & Medicine 71 (2010) 1749–1756

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Beyond body counts: A qualitative study of lives and loss in Burkina Faso after 'near-miss' obstetric complications

Katerini Tagmatarchi Storeng [a,e,*], Susan F. Murray [b], Mélanie S. Akoum [c], Fatoumata Ouattara [d], Véronique Filippi [a]

[a] London School of Hygiene & Tropical Medicine, London, UK
[b] King's College London, London, UK
[c] AfricSanté, Bobo-Dioulasso, Burkina Faso
[d] Institut de Recherche pour le Développement, Ouagadougou, Burkina Faso
[e] Centre for Development and the Environment, University of Oslo, Oslo, Norway

ARTICLE INFO

Article history:
Available online 31 May 2010

Keywords:
Burkina Faso
Pregnancy complications
Childbirth
Post partum
Loss
Women
Qualitative

ABSTRACT

Averting women's pregnancy-related death is today recognised as an international health and development priority. Maternal survival is, in this sense, a success story. There is, however, little research into what happens to the women who survive the severe obstetric complications that are the main causes of maternal mortality. This paper examines findings from repeated in-depth interviews with 64 women who survived a clinically defined 'near-miss.' These interviews were conducted as part of a prospective longitudinal study of women who 'nearly died' of pregnancy-related complications in Burkina Faso, a poor country in West Africa. Drawing on sociological and anthropological perspectives that consider the defining characteristics of 'loss' to be social as much as biomedical, the paper seeks to understand loss as disruption of familiar forms and patterns of life. Women's accounts of their lives in the year following the near-miss event show that such events are not only about blood loss, seizures or infections, but also about a household crisis for which all available resources were mobilised, with a train of physical, economic and social consequences. The paper argues that near-miss events are characterised by the near-loss of a woman's life, but also frequently by the loss of the baby and by further significant disruptions in three overlapping dimensions of women's lives. These include disruption of bodily integrity through injury, ongoing illness and loss of strength and stamina; disruption of the household economy through high expenditure, debts and loss of productive capacity; and disruption of social identity and social stability. Maternal health policy needs to be concerned not only with averting the loss of life, but also with preventing or ameliorating others losses set in motion by an obstetric crisis.

Introduction

Averting the avoidable loss of women's lives in pregnancy and childbirth in low-income countries has been a subject of campaigning and of research for the last two decades. As a consequence, maternal mortality ratios (MMRs) are now widely used to measure improvement in maternal health, and increasingly also as a proxy indicator of health system functioning and of economic and social development. Most maternal deaths are caused by major obstetric complications (including haemorrhage, infection, hypertensive disorders, unsafe abortion and obstructed labour), and could have been averted had women received adequate treatment of these complications (Khan, Wojdyla, Say, Gulmezoglu, & Van Look, 2006; Ronsmans & Graham, 2006). By contrast to the wealth of research on maternal mortality, researchers have paid relatively little attention to those women who, through access to life-saving care, *survive* the complications that are the main cause of maternal mortality (Grossmann-Kendall, Filippi, De Koninck, & Kanhonou, 2001; Kielmann, 2002; Souza, Cecatti, Parpinelli, de Sousa, & Serruya, 2006; Souza, Cecatti, Parpinelli, Krupa, & Osis, 2009; Wall, 1998).

As a contribution to addressing this deficit, an inter-disciplinary study was conducted into the magnitude and consequences of severe acute obstetric morbidity – or 'near-miss' obstetric events- in Burkina Faso, a poor country in West Africa (Filippi et al., 2007; Storeng et al., 2008). An analysis of the epidemiological findings of this study, published in the Lancet, concluded that women who

* Corresponding author. Centre for Development and the Environment, University of Oslo, Pb 1116 Blindern, 0317 Oslo, Norway. Tel.: +47 22858883.
E-mail address: katerini.storeng@sum.uio.no (K.T. Storeng).

0277-9536
doi:10.1016/j.socscimed.2010.03.056

experience such near-misses are at greater risk of dying and of experiencing a range of other adverse outcomes in the year following the complication (Filippi et al., 2007).

Such statistical associations highlight the need to look beyond *immediate* maternal survival of a life-threatening obstetric complication to the health and wellbeing consequences of these events. In this paper we therefore respond to calls from within public health for social science insights into how women's lives are affected by difficult obstetric events (Graham, Berer, Price, & Brabin, 1992; Lewis, 2003). We present findings from observations and in-depth interviews with a subset of the women who survived life-threatening obstetric events, conducted as part of the inter-disciplinary study referred to above. Drawing on sociological and anthropological perspectives, we understand the near-miss event not simply as a loss of health or function in biomedical terms. While biomedical disruption is integral to the experiences of women who 'nearly die' during pregnancy and delivery, we conceptualise the notion of 'loss' more broadly as a fundamentally social process, entailing disruption of familiar forms and patterns of life. In this paper we describe the losses and struggles that the success story of 'lives saved' obscures and argue that the impact of near-miss events can be seen with regard to three overlapping dimensions of women's lives: bodily disruption, disruption of the household economy, and disruption to social identity and stability.

Defining 'loss' in pregnancy and childbirth

The meaning of the term 'loss' varies depending on discipline and context. Within biomedicine the commonest usage of the term 'loss' is in terms of loss of life. Within public health a large body of work has attempted to numerically quantify not only a person's loss of life but also loss of health-related 'quality of life' due to the occurrence of an injury or a disease. Of particular influence in the international health policy field, for example, is a health gap measure known as the Disability Adjusted Life Year (DALY) that extends the concept of 'potential years of life lost' due to premature death to include equivalent years of 'healthy' life lost by virtue of being in states of poor health or disability (Murray, 1996; Murray, Salomon, Mathers, & Lopez, 2002).

Such quantitative conceptualisations of loss pay little attention to the social dimensions of loss or potential loss of life. Although measures of health-related quality of life and the DALY methodology represent attempts to incorporate social aspects into the 'body count' that often dominates discussions about priority-setting and evaluation in public health, these concepts have been subject to critique for their universalising conceptualisations of functioning and social wellbeing (Allotey & Reidpath, 2002; Reidpath, Allotey, Kouame, & Cummins, 2003; Rock, 2000). Where the most widely used application of 'loss' is 'loss of life' the social dimensions within this framing tend to be seen as the processes of bereavement that results from death of a loved one. However, some writers from within the mental health therapies have argued that aspects of 'bereavement reactions', including a profound sense of dislocation, can occur in other types of loss, such as loss of a limb (Maguire & Murray Parkes, 1998), loss of sensory or cognitive functions (Fitzgerald & Murray Parkes, 1998), and in 'ambiguous losses' such as divorce, handicap and terminal illness (Leick & Davidsen-Nielsen, 1991).

It is also 'loss of life' – whether actual or anticipated lives – that has tended to dominate the quantitative human reproductive sciences. Here, individuals' 'reproductive losses' (or 'failures') are those reproductive experiences that result in sub-fertility, infertility, infant death, stillbirth, abortion or miscarriage. However, researchers within medical anthropology and medical sociology have made some important contributions to advancing understanding of the meanings of such reproductive losses, offering a counterpoise to the quantitative approaches discussed above (Cecil, 1996; Frost, Bradley, Levitas, Smith, & Garcia, 2007; Ginsburg & Rapp, 1995; Layne, 2003).

Anthropological interest in advancing understanding of the meanings of infertility, pregnancy loss and other forms of reproductive morbidity has grown since the mid-1990s, in part as a response to recognition of the relative neglect of these topics within the large body of anthropological scholarship on fertility, family planning and childbirth (Davis-Floyd & Sargent, 1997; Inhorn, 1994; Inhorn & Buss, 1994; Jaffré & Prual, 1994; Jenkins & Inhorn, 2003; Lock & Kaufert, 1998). In one widely referred to collection in *Social Science & Medicine*, Jenkins and Inhorn (2003) brought together the growing body of anthropological work contextualising diverse experiences of loss of childbearing potential in different cultures under the umbrella of the study of 'reproduction gone awry.' More recently, anthropologists have elaborated the concept of 'reproductive disruptions' to capture the notion of 'the politically and emotionally charged contestations taking place in the everyday reproductive experiences of women and men around the globe' (Inhorn, 2007 p. ix).

Anthropologists' concern with the way in which modernity interacts with local forms of meaning-making within the experience of 'reproductive disruptions' resonates in interesting ways with the sociological analyses of Peter Marris. In his book 'Loss and Change', Marris (1974, 1986) argued that 'loss', with the accompanying sensations and processes of bereavement, occurs when familiar forms and patterns of life are disrupted in ways that threaten our sense of continuity of meaning. He argued that these disruptions can occur because of death of someone close, but equally they can occur through different social transitions. Marris illustrated this with examples from fieldwork in the UK, US and Africa and case studies ranging from the experiences of slum clearances and enforced re-housing, to removal from one's familiar social milieu through first generation university education. Similarly to Marris' understanding of loss, anthropologists writing about various forms of reproductive disruptions have treated the defining characteristic of loss as social rather than as simply biomedical in nature: loss occurs 'when a pattern of relationships is disrupted in a way for which we are not fully prepared' (Marris, 1986, p. 2). For anthropologists, the biological and the social are not separate domains, but are co-produced (Lock & Kaufert, 1998). It is the illumination afforded by this perspective, and the central notion of loss as disruption of familiar forms and patterns of life, that we attempt to carry forward in this paper. Our aim is to better understand the social context of survival occasioned by biomedical intervention.

Setting and methods

This paper is derived from a study across six urban and rural sites in Burkina Faso, a former French colony in West Africa of roughly 14.5 million inhabitants (WHO, 2009). The UN ranks Burkina Faso 177th out of 182 countries in terms of its human development index, a composite measure of life-expectancy at birth, adult literacy rate, combined gross enrolment ratio and GDP per capita (UNDP, 2009). Cotton production is the economic mainstay in this landlocked country, but the industry is vulnerable to frequent droughts and to fluctuating world prices. Instability in neighbouring Côte d'Ivoire has hampered formal and informal trade and decimated social support structures that relied on remittances from migrant workers.

Burkina Faso's economic poverty is mirrored in its health indicators, including its estimated MMR of 700 per 100,000 live births, one of the highest MMRs in the world (WHO, 2009). Such

statistics reflect poor access to healthcare. Only 54% of births are attended by skilled health personnel (WHO, 2009), a figure that masks significant disparities between urban and rural populations (Ronsmans et al., 2003). The c-section rate is estimated to be 0.7% (WHO, 2009), suggesting an unmet need for emergency obstetric care. The health system is weak and under-resourced. The total expenditure on health is 6.3% percent of GDP, with 32.9% of this coming from external donor resources (WHO, 2009). A survey of the country's safe motherhood programmes published in 2005 found that only two of 20 programmes were designed to improve the availability of comprehensive obstetric care, considered essential for maternal mortality reduction, while only two comprehensively addressed all components of skilled attendance at delivery (Hounton et al., 2005). User fees and other costs associated with maternity care are high. Emergency obstetric care in particular can entail catastrophic expenditure (Storeng et al., 2008). Reflecting recognition of the unaffordable and regressive impacts of user fees, the government of Burkina Faso in 2006 started implementing a policy to subsidise user fees for maternity care in hospitals (Ministère de la Santé Burkina Faso, 2006), although the effects of this policy change have yet to be systematically evaluated.

The findings presented in this paper are drawn from an ethnographic study that was nested within a prospective cohort study. The ethics committees of the London School of Hygiene & Tropical Medicine and of the Centre Muraz/Ministry of Health, Burkina Faso approved the study, and informed consent was obtained from all participants. Data collection took place between December 2004 and April 2006. The study compared the experiences of women who had experienced 'near-miss' events during pregnancy and childbirth with women who had 'uncomplicated' deliveries. 'Near miss' is a term used for severe and life-threatening obstetric complications necessitating urgent medical intervention in order to prevent the likely death of the mother (Filippi et al., 2000; Mantel, Buchmann, Rees, & Pattinson, 1998). Near-miss events are often associated with emergency procedures such as caesarean section or hysterectomy, with states such as convulsions and coma and with treatment in intensive care, including following complications from unsafe abortions and with foetal deaths (Kaye, Mirembe, Aziga, & Namulema, 2003; Mantel et al., 1998). Although prevalence estimates vary depending on the exact clinical definition that is used, a systematic review from 2004 found that 4%–8% of pregnant women who deliver in hospitals in resource poor areas will experience a near-miss event when organ failure was used to define the near-miss (Say, Pattinson, & Gulmezoglu, 2004).

The epidemiological study cohort ($n = 1014$) included 337 cases and 677 controls. The main inclusion criterion for cases was a pregnancy that ended in a near-miss obstetric event (whether during pregnancy, labour and delivery) or during the puerperium (the first six weeks after the end of pregnancy). Based on operational definitions, in this study a near-miss was identified through signs of clinical severity such as symptoms of shock or a major obstetric intervention such as life-saving hysterectomy for massive haemorrhage (see Filippi et al., 2007 for details). The main inclusion criterion for controls was uncomplicated delivery, defined as a vaginal delivery with a live birth that did not require major obstetric intervention. Women were recruited prospectively from hospitals because severe obstetric complications cannot be easily diagnosed retrospectively in the community (Filippi et al., 2000). These hospitals included the Burkina Faso's only two referral level and teaching hospitals, two regional hospitals and three district hospitals with surgical capacity to perform life-saving caesarean sections.

82 women were selected purposively from the cohort for participation in fully confidential, in-depth interviews. All the 82 women approached agreed to participate in the qualitative study. 64 of these had experienced a near-miss event and it is on their accounts that this paper principally draws. These women had survived a range of life-threatening complications, including massive haemorrhage, eclampsia, complications from unsafe abortion, anaemia and major interventions such as hysterectomy and emergency caesarean section. 23 of this sub-sample had live babies, 24 had stillbirths or their babies died early in the neonatal period, and 17 had 'early pregnancy loss,' including from induced abortion, miscarriage and ectopic pregnancy. Their median age was 27.5 years, while their median parity was 2 deliveries (range 0–10). Their mean duration of education was 5 years. 25% were never married, 38% were in monogamous marriages and 17% were in polygamous marriages. The sample was purposively selected, but was broadly similar in main characteristics to the cohort sample (see Storeng et al., 2008).

Trained and experienced anthropologists (FO and KTS) and a sociologist (MSA) conducted in-depth interviews with women in their homes between 1 week and 1 month after discharge from hospital and again about 6 months later. For logistical reasons, only 13 of the women were also interviewed around 12 months following discharge from hospital. Whenever possible, we also interviewed their husbands or other relatives. The interviews were conducted either in French or in a local language (Dioula or Moore). The interviews were open-ended and explored women's reproductive histories, healthcare seeking, economic aspects of care-seeking, perceived health and recovery, social relationships, livelihoods and everyday lives. All the interviews were recorded and transcribed verbatim with translation to French. The qualitative data also include observations made during the interview and during informal visits to women's homes throughout the duration of the study. All names referred to in the text are pseudonyms.

NVivo software was used to organise the data, to code for major themes and to perform key word searching within the dataset. The primary analysis of the qualitative data was carried out by three of the authors (MSA, FO, KTS) using an interpretive and thematic approach after each researchers had read the transcripts. The salience of the notion of 'loss' emerged out of the inductive data analysis we conducted.

Findings

Our analysis suggests significant loss and disruption in the wake of life-threatening medical events. As we show below, while women are 'saved' through medical intervention, what has occurred often causes significant disruptions in the forms and patterns of their existence and life course.

Disruption of bodily integrity

In women's narratives, surviving a near-miss was associated with luck, sometimes with gratitude to healthcare personnel, but also, in a very immediate way, with loss. Women's accounts were replete with references to loss of health, blood, strength and stamina, as well as to the feared or actual loss of life, children and bodily integrity. Bodily integrity can be understood as referring literally to physical form, but also to function, to an individual's sense of their body as within their control, and to the emotions that accompany such sensations. Feelings of loss and weakness had implications for women's ability to recover within what they felt to be a reasonable time frame, their ability to resume productive and domestic activities and also their ability to achieve another pregnancy.

The majority of the women we interviewed who had survived a clinically defined near-miss event reported having experienced fear that they and/or their baby would not survive the event. They

recounted the intense confusion and dread that surrounded the management of the emergency, from arranging transport and referral to hospital, gathering money and waiting to receive treatment. Many vividly described the loss of blood and fluids, and also the initial elation when they realised that they would not die, or, for some, that their baby was beyond immediate danger.

While expressions of thanks to healthcare personnel for their intervention were not uncommon, some women did also feel 'traumatised' by their experience in healthcare facilities, expressing dismay that they had received poor information about what was happening, or that healthcare staff had spoken in a language they could not understand or even that staff had hurt them. In a particularly poignant case Mariam, a 22 year-old woman who had been hospitalised for 11 days after her delivery, reported that midwives at the health centre she presented at for delivery had 'mutilated' her genitals (presumably attempting an episiotomy or defibulation) as they tried to speed up the delivery, before eventually referring her on to the hospital. In the year after this had occurred she described symptoms consistent with vesico-vaginal fistula and reported that she felt so disgusted with her own body that she refrained from any sexual activity.

> The doctor told me that when he did the operation, he was surprised to see that everything was torn. He said he didn't know how I was going to be able to go to the toilet. Everything was mixed up. The urine and the faeces. That's why they gave it to me [the catheter]. When they removed it, they were worried about how I was going to get along, but they didn't say anything about it to me even though I kept on asking. Maybe they were worried that I would be scared. When I saw my wound later on I was scared.

Although Mariam's is an extreme case, the experiences of women who survived near-miss events more generally put into relief a range of disruptions and bodily threats inherent to passage through pregnancy and childbirth for all women in a setting such as Burkina Faso. Echoing a frequent finding from other parts of sub-Saharan Africa, women reported that following a delivery, a woman has 'one foot in the grave' until 40 days have passed. As Sanata, a 26-year old first-time mother, explained, it is only at this point that a recently pregnant woman resumes her position as 'a woman amongst women'. Not surprisingly, this interstitial period between life and death extends in time for women who experience severe illness during pregnancy and childbirth. The immediate physical dangers associated with recovery delay women's re-entry into social life and resumption of their expected social role. The danger of death looms large for a prolonged period, as born out by the higher risk of death that near-miss survivors suffer up to a year after the event (Filippi et al., 2007).

A common conceptualisation among the women we interviewed is that severe illness in pregnancy and childbearing accelerates and exacerbates an inevitable and cumulative loss of vitality associated with childbearing more generally. As Balkissa, a 35-year old mother of four who had suffered life-threatening anaemia in her most recent pregnancy, explained:

> When you deliver, it obviously shortens your life, because each delivery weakens you more and more. If you deliver once, you lose strength, the second time you lose some too and so on. The way that you were in your youth, you will never be that way again after your delivery. You lose a lot of strength. Everything is up to God. He is the one who will give you back the force to start working again.

As this quote suggests, our informants perceived loss of strength, whether associated with excessive work, illness or childbearing, was both a cause and a consequence of pregnancy complications. Those who had survived serious loss of strength – as was frequently the case among women classified as near-miss – often reported that recovering this strength was a lengthy and difficult process. For many, the challenge of doing so was intensified by the fact that they found themselves unable to afford follow-up healthcare consultations and medicines. For others it was also a process that was rendered extremely difficult by their lack of recourse to rest from work, including domestic and agricultural work, given that possibilities for labour substitution were severely curtailed. For instance, Awa, a 27-year-old rural woman who delivered a stillborn baby following a life-threatening eclamptic fit, continued to report that she felt weak and ill during the year that followed. When we visited her around six months after her discharge from hospital she and her husband explained that the delivery and stillbirth had left her extremely depleted. She continued to suffer from 'tension' (hypertension) that made her dizzy, making it intermittently impossible for her to do her domestic tasks and to contribute to the household's subsistence agricultural production as she did before the delivery. Awa's husband was only able to afford her prescribed medicine at two-weekly intervals, meaning that for two out of every four weeks she suffered incapacitating symptoms, and had to rely on her husband or co-wife to substitute for her at home and in the fields.

Disruption of the household economy

Awa's case highlights that disruption to bodily integrity is interlinked with disruptions to the domestic economies of households who are forced to manage the economic upheaval that is often associated with medical emergencies of the kind our informants endured, as well as the associated follow-up care (cf. Storeng et al., 2008). Complications that require a major obstetric intervention such as caesarean section or hysterectomy are extremely expensive in Burkina Faso, as in other countries where patients take on a large part of health system financing through user fees (Borghi et al., 2003). Women who had survived near-miss events generally described living in severely impoverished conditions and told of being further impoverished by the catastrophic costs of treatment. In short, the impact of these costs was especially dramatic because they were unexpected. Women, their partners and their family members often saved money for the basic supplies and user fees associated with hospital delivery, but few were prepared for the cost incurred by a complication, which can be ten or twenty times higher than this. Relatives incurred debts from family members, neighbours and money-lenders and sold property, including clothing, crockery and bicycles, to pay the fees. While on the one hand, they expressed that these high costs are trivial compared to the importance of saving the woman's life, the debt that many households had incurred resulted in not only economic difficulties, but also in long-term anxiety and social tensions (Storeng et al., 2008).

Women employed a range of strategies in order to attenuate the negative economic consequences of the financial burden associated with their health problems and to minimise the burden on the family. Such strategies aimed not only to improve the household's economic status, but also to restore and maintain its social order. However, they often resulted in 'medical' concerns being sidelined. We saw that some women continued working in order to appease husbands and co-wives – or simply because it was necessary for survival – despite acknowledging that hard physical labour would compromise their physical recovery. Other women with ongoing illness and disability refrained from asking for treatment of health problems or had to undergo heavy ordeals in order to collect money for treatment. In the preliminary fieldwork for this study one sixty-year-old woman recounted that she waited twenty years to request

treatment for vaginal prolapse because she knew there was no money to pay it. Similarly, an eighteen-year-old girl told of working two years in the cocoa plantations of Côte d'Ivoire with chronic incontinence in order to raise money to pay for surgery to repair the fistula she had acquired following obstructed labour.

Informants' narratives also underlined that the risk of multiple disruptions associated with near-miss events were not equally distributed, but rather disproportionately affected the poorest women. The experience of 26-year-old Salimata, helps to illustrate how concerns about poverty permeate ideas about risk and the experience of pregnancy complications. Salimata's first pregnancy had gone well, but the baby had died in infancy, after which her first husband left her. When we met her a few years later, she considered herself lucky that Yacouba, a subsistence farmer, had offered to make her his second wife. The wedding was postponed when Salimata fell pregnant. When she developed fever and started vomiting in the eight month of her pregnancy, Yacouba took her on a bicycle to the nearby health centre. By the time they arrived she had started convulsing, a symptom of eclampsia, one of the major causes of maternal mortality. Staff at the health centre declared that Salimata was in a life-threatening state. She responded to treatment and survived, but the baby was stillborn. Yacouba was helped by people in the village to meet the cost of care, although he was also forced to borrow money and sell one of his farm animals. He was extremely grateful that Salimata had survived, but worried about the effect of the expenditure on their future. As head of the extended family household, Yacouba was responsible for feeding around twenty people in his compound. With one wife recently delivered and another wife pregnant, he found himself without any money and with an uncertain economic future and worried about the impact on his currently pregnant wife. As he put it:

> For us, most of our experience is exhaustion and misery. If you don't have money, misery is unavoidable. When you look at women's difficulties, most of it is hard work. If you look at those women who have a little bit of money, they don't really have the same experience. People who are in the bush are more used to doing tiring work. If you had a bit of money in the past but suddenly are no longer able to give the same amount of food to your wife, she will be tired. She won't have any more force. If a woman lacks strength, her delivery will be difficult.

A substantial proportion (a quarter) of the near-miss women in our sample was unmarried and these women often expressed feelings of guilt after their own family had settled costs that, in other circumstances, should have been a husband's responsibility. It was not uncommon that unmarried women were either completely unemployed or lived in abject poverty up to a year following the near-miss event. Some were clearly dismayed and ashamed to have burdened their families not only with an illegitimate child, but also with the expense and difficulty of managing the obstetric condition. Natou, an adolescent mother who had recently moved from her native village to live with her sister and brother-in-law in the city in the hope of finding employment, explained how her emergency care and the birth of her child had contributed to depleting the family's finances. Several months after her delivery, Natou often went hungry and felt weakened and unable to work, worried about obtaining food and agonised that rather than contributing to alleviating the family's problems – as had been her intention when arriving in the city – she had rather worsened the problems by adding not only one, but two mouths to feed. Many other unmarried women reported similar experiences, often suffering both emotional and physical violence as a result (Ouattara & Storeng, 2005). While these experiences were not exclusive to women who had survived near-miss events, it was clear that the difficulties of managing such complications exacerbated pre-existing tensions around pregnancy in young, unmarried women.

The analytical focus on disruption and loss should not prevent us from seeing that the period following a near-miss event can have positive as well as negative aspects and that it was the resilience of women, as well as their broader social networks, that helped ensure women's survival in the first place. Even where there was unforeseen disruption and change, some women had sufficient resolve and social capital to move forward. The birth of a live child despite obstetric emergency could provide an opportunity to redefine life courses and relationships with other people. Elise, a 19-year old mother of one, for example, was determined to take responsibility for her 'mistake' of becoming pregnant while an unmarried adolescent by demonstrating to her disappointed family members that she was a capable mother. To this end, she found a job with a semi-regular income working in a *telecentre* that enabled her to contribute to the household finances. On the whole, however, unmarried women who survived near-miss events experienced multiple economic and social constraints on their ability to exercise this sort of productive agency.

Disruption to social identity and stability

The kind of practical and economic concerns discussed above were compounded on a day-to-day basis by the impact the near-miss event – as a medical, but also economic and social catastrophe – had on women's status within the household and family. Existing intra-household power struggles and competition over resources often intensified following a near-miss event. Some women reported deteriorating relationships with others in their social network, especially women living in the same compound, such as co-wives, mothers-in-law and sisters-in-law, especially if they perceived that these other female family members resented them for having laid claim on too large a share of the family resources. While some husbands were loving, others were punitive, especially if there was no living child. For example, Marie, a young woman who was hospitalised after prolonged labour and the delivery of stillborn twins and who suffered from a fistula, explained how her partner and his family scolded her for having brought problems upon them and eventually abandoned her in the hospital, saying that because she had become so expensive it was no longer their concern what happened to her. Here our findings resonate with other anthropological work that questions somewhat romanticised notions of the altruistic household pursuing the interests of the collectivity (Dwyer & Bruce, 1988; Nichter & Kendall, 1991).

Reproductive disruptions also often threatened relationships between women and men. When a pregnancy did not produce a living child, men's contribution sometimes came to be defined as 'wasted' and the social obligation to contribute to the woman's uptake often ceased, especially outside of formally defined marital relationships (Gruénais & Ouattara, 2006). Infertility, suboptimal fertility and failure to produce living children all theoretically provided grounds for divorce and, even if the marital relationship survived, often created social tensions within households. This was especially true when a first pregnancy did not produce a living child, and when women had suffered repetitive pregnancy loss or infant death or remained childless after several pregnancy attempts. In some cases, such childbearing difficulties prompted men to take another wife to provide more children. A minority of our informants welcomed a second wife who could share not only productive but also reproductive activities. Most women, however, were adamant that this was a worst-case scenario. As one informant put it: 'It is difficult for a woman to remain happy in a household where a second, more fertile wife, has entered'. The

loss of a foetus or newborn child thus often occasioned another type of loss, that of marital stability and the associated status and social support available to women.

The social vulnerability brought about by problematic childbearing was clear in women's efforts to balance medical advice and social pressures. For example, women who had undergone invasive surgery, including emergency caesarean section, were often told by healthcare providers that they should wait two to three years before attempting another pregnancy. This recommendation accorded with women's own understandings that the womb needs to replenish blood and strength before it can sustain another pregnancy, but was in tension with the social imperative for married women to achieve another pregnancy quickly. Even women who were already in polygamous relationships feared that delays in achieving a successful pregnancy would further weaken their position in relation to their husband. Some women felt the pressure for childbearing so strongly that they invested everything in obtaining and maintaining a pregnancy, despite having been warned that doing so could be perilous to their immediate health and survival, as well as to their future fertility.

While, in some cases, women were supported by their husbands in achieving contraceptives or refraining from sex in order to avoid becoming pregnant 'too soon', for the majority of married women who wished to delay another pregnancy, overt efforts to do so were not possible. Contraceptives were sometimes used covertly, preferably injected contraceptives that could not easily be detected. This was because overtly and deliberately delaying pregnancy could, informants explained, prompt a husband to take another wife or initiate extramarital sexual relationships. This was seen to be the case even though the reason for delaying pregnancy was not to have fewer children per se, but rather to ensure rest and recovery so as to ensure that a future pregnancy would be successful. Such use of contraceptives for the expressed purpose of ensuring physical recovery corresponds with Bledsoe, Banja, and Hill's (1998) interpretation that the high use of contraceptives among Gambian women who experienced a miscarriage, abortion or stillbirth in the previous five years was motivated by a desire not to control fertility as such, but by the perceived need to replenish their bodies and thereby increase their future reproductive potential.

Discussion

In this paper we have stepped outside the common biomedical and demographic usages of 'loss', and have taken the perspective that loss occurs when familiar forms and patterns of life are disrupted in ways that threaten persons' sense of continuity of meaning. Attention to the social experiences of near-miss obstetric events shows that a 'near-miss' is not only about blood loss, seizures or infections, but about a household crisis for which all available resources are mobilised, with a train of consequences. Such events are characterised by the near-loss of life, including not only women's lives but also that of their babies, and by further significant disruptions in three overlapping dimensions. These include, first, disruption of women's bodily integrity through injury, ongoing illness and loss of strength and stamina; second, disruption of the household economy through debts incurred and loss of productive capacity; and third, disruption of women's social identity and stability including loss of social standing in the household, and marital and relational loss.

The paper has shown that the availability of emergency obstetric intervention resulted in the selective and pragmatic adaptation of biomedical childbirth care, ensuring survival for many (Kaufman & Morgan, 2005). The medical management of pregnancy and childbirth, including of life-threatening complications, however, does not occur in isolation, but is engendered and experienced within complex social and economic contexts that place some women at disproportionate risk, through combined medical, social and economic vulnerability, geographical isolation, age and gender relations. Indeed, our study reiterates the importance of taking economic constraints into account when interpreting women's experiences of obstetric morbidity (Chapman, 2003; Janes & Chuluundorj, 2004). Just as poor women are disproportionately at risk of maternal death, many of the women who survive near-miss events in Burkina Faso are also economically and socially marginal, both before experiencing complications and even more so afterwards, when the economic and social stresses involved in managing the care of such complications increases their vulnerability. For women who survive the trauma of life-threatening obstetric complications, the pervasive uncertainty and danger extends into the postpartum period and beyond. Women know that severe obstetric difficulties may predict long-lasting difficulties and may ultimately compromise the productive and reproductive capacities upon which their social worth and positioning within the household is based. In such situations, women's reproductive practices are heavily influenced by what is required to protect that position from further erosion. As such, the loss we have discussed in this paper results from the co-production of biomedical and social vulnerability (Lock & Kaufert, 1998).

A strength of the theoretical and empirical perspective on loss taken in this paper is that it helps us conceive of maternal health policy as being not only about averting the loss of maternal life, but also concerned with preventing or ameliorating other 'losses' that can be set in motion by an obstetric crisis. Addressing these broader losses will require better integration between health and social policy to protect women who are vulnerable not only to the health, but also the social and economic consequences of obstetric complications. The current policy in Burkina Faso of reducing user fees for delivery care (including obstetric care) may be one important way to reduce the number of near-miss events and diminish the economic consequences for households of paying for such care.

In this paper we have emphasised the way in which women who survive life-threatening complications lose health and vitality in the aftermath. We have highlighted the associated feelings of grief when they are deprived of their reproductive or productive capacity and the disadvantage resulting from the loss of income and marital stability. There are, however, important caveats to this analysis. First, it is important to restate Marris' emphasis that loss and change occur in many different social transitions. A defining characteristic for our sample was the experience of a biomedical 'near-miss' event and we tracked the loss and disruption that often followed in its wake, but loss and disruption may also be experienced for other reasons during and following pregnancy. Second, while Marris' theorisation of social loss and change as akin to a process of bereavement is illuminating, its application leads to a focus upon negative and difficult experiences. If social policy is to protect the more vulnerable and those less able to resist and to adapt, then a 'loss' framework can inform and facilitate this. But it would be wrong to portray experiences following obstetric near-misses as universally negative. It is important to emphasise that women also display agency and ingenuity, first in mobilising the resources needed to respond to emergencies, and then in coming to terms with the various disruptions that ensue, and in taking their lives forward. In an earlier paper we outlined some of the financial coping strategies that were used (Storeng et al., 2008). Currently the research team is engaged in revisiting interviewees four years on, exploring how near-miss experiences become woven in with other life events over the course of time. Such a longer-term view may help us to understand how women's recovery can be supported or obstructed.

Conclusion

Anthropologists have often noted that 'body counts' and extrapolated statistics carry immense weight in health and development planning (Kaufert & O'Neil, 1993; Nichter, 2008; Nichter & Kendall, 1991). The safe motherhood research and advocacy community has understood and responded practically and politically to this reality (Graham, 2002; Graham & Campbell, 1992). Epidemiological measurement techniques have been, and continue to be, extremely important in demonstrating the impact and scale of unnecessary death and suffering in pregnancy and childbirth in many countries, and in inferring associated aetiology.

However, quantitative research will inevitably be confined by what is 'reliably measurable'. Such limitations are often compounded by the demands in the political sphere of global heath for 'simple' measures and targets, contracting health and wellbeing goals to a survival or coverage statistic such as the MMR. Because near-miss events are characterised by their causal proximity to maternal deaths and occur more frequently, they have been used as proxies for maternal deaths in epidemiological studies. Despite – and perhaps because of – this application of the epidemiological near-miss concept, the social implications of surviving these complications have been neglected within public health (Ashford, 2002; Graham et al., 1992). In this and other papers from the study in Burkina Faso that have taken different analytical approaches (Filippi et al., 2007, Storeng et al., 2008) we begin to redress this imbalance, offering an examination of the bodily, economic and social disruption, the losses and struggles that the simple success story implied in 'maternal survival' statistics obscures. By looking beyond biomedical sickness and death to try 'to identify the sufferer' (Nichter & Kendall, 1991, p. 196) in this way, we hope to contribute to the interface of social scientific and public health understandings of such loss.

Acknowledgements

The data collection for this paper was done as part of Immpact, a global research initiative for the evaluation of safe motherhood intervention strategies, funded by the Bill & Melinda Gates Foundation, the UK Department for International Development (DFID), the European Commission and USAID. The analysis and writing was also supported by the DFID-funded research programme consortium on maternal and neonatal health (Towards 4 + 5). KTS, SFM, MSA and VF were supported by a joint grant from the Hewlett Foundation and ESRC and KTS was also supported by the Research Council of Norway during the writing of this paper. The funders have no responsibility for the information provided and the views expressed herein are solely those of the authors. We thank the study participants. We also thank Rasmané Ganaba, Tom Marshall, Steve Russell and Nicolas Méda, our collaborators on follow-up research in Burkina Faso, Julia Hussein and Bregje de Kok for comments on the first draft and the participants at the 'Loss in Pregnancy and Childbirth' workshopheld in Edinburgh in September 2008, for their comments.

References

Allotey, P. A., & Reidpath, D. D. (2002). Objectivity in priority setting tools in reproductive health: context and the DALY. *Reproductive Health Matters, 10*(20), 38–46.

Ashford, L. (2002). *Hidden suffering: Disabilities from pregnancy and childbirth in less developed countries*. Population Reference Bureau.

Bledsoe, C., Banja, F., & Hill, A. G. (1998). Reproductive mishaps and Western contraception: an African challenge to fertility theory. *Population and Development Review, 24*, 15–57.

Borghi, J., Hanson, K., Acquah, C. A., Ekanmian, G., Filippi, V., Ronsmans, C., et al. (2003). Costs of near-miss obstetric complications for women and their families in Benin and Ghana. *Health Policy and Planning, 18*(4), 383–390.

Cecil, R. (Ed.). (1996). *The anthropology of pregnancy loss: Comparative studies in miscarriage, stillbirth and neonatal death*. Oxford: Berg.

Chapman, R. R. (2003). Endangering safe motherhood in Mozambique: prenatal care as pregnancy risk. *Social Science & Medicine, 57*(2), 355–374.

Davis-Floyd, R. E., & Sargent, C. F. (Eds.). (1997). *Childbirth and authoritative knowledge: Cross-cultural perspectives*. Berkeley: University of California Press.

Dwyer, D., & Bruce, J. (Eds.). (1988). *A home divided: Women and income in the third world*. Stanford: Stanford University Press.

Filippi, V., Ganaba, R., Baggaley, R. F., Marshall, T., Storeng, K. T., Sombie, I., et al. (2007). Health of women after severe obstetric complications in Burkina Faso: a longitudinal study. *Lancet, 370*(9595), 1329–1337.

Filippi, V., Ronsmans, C., Gandaho, T., Graham, W., Alihonou, E., & Santos, P. (2000). Women's reports of severe (near-miss) obstetric complications in Benin. *Studies in Family Planning, 31*(4), 309–324.

Fitzgerald, R. G., & Murray Parkes, C. (1998). Coping with loss: blindness and loss of other sensort and cognitive functions. *British Medical Journal, 316*(7138), 1160–1163.

Frost, J., Bradley, H., Levitas, R., Smith, L., & Garcia, J. (2007). The loss of possibility: scientisation of death and the special case of early miscarriage. *Sociology of Health & Illness, 29*(7), 1003–1022.

Ginsburg, F. D., & Rapp, R. (Eds.). (1995). *Conceiving the new world order: The global politics of reproduction*. Berkeley: University of California Press.

Graham, W. J. (2002). Now or never: the case for measuring maternal mortality. *Lancet, 359*(9307), 701–704.

Graham, W., Berer, M., Price, J., & Brabin, L. (1992). Raising awareness about reproductive morbidity. *Annals of Tropical Medicine & Parasitology, 86*(Suppl. 1), 11–18.

Graham, W. J., & Campbell, O. M. (1992). Maternal health and the measurement trap. *Social Science & Medicine, 35*(8), 967–977.

Grossmann-Kendall, F., Filippi, V., De Koninck, M., & Kanhonou, L. (2001). Giving birth in maternity hospitals in Benin: testimonies of women. *Reproductive Health Matters, 9*(18), 90–98.

Gruénais, M. E., & Ouattara, F. (2006). *Le 'prix de l'accouchement'. La prise en charge de la grossesse en Afrique subsaharienne, une nouvelle étape de la compensation matrimoniale Colloque international Familles et Santé: le regard des sciences sociales*. Université d'Oran (GRAS) – Université de Lille 1 (CLERSE). Oran, Algeria: Association internationale des sociologues de langue française (AISLF). April 4–5.

Hounton, S. H., Meda, N., Hussein, J., Sombie, I., Conombo, G., & Graham, W. J. (2005). Describing safe motherhood programs for priority setting: the case of Burkina Faso. *International Journal of Gynecology & Obstetrics, 91*(1), 97–104.

Inhorn, M. (1994). *Quest for contraception: Gender, infertility, and the Egyptian medical tradition*. Philadelphia: University of Pennsylvania Press.

Inhorn, M. (Ed.). (2007). *Reproductive disruptions: Gender, technology and biopolitics in the new millennium*. New York/London: Berghahn Books.

Inhorn, M. C., & Buss, K. A. (1994). Ethnography, epidemiology and infertility in Egypt. *Social Science & Medicine, 39*(5), 671–686.

Jaffré, Y., & Prual, A. (1994). Midwives in Niger: an uncomfortable position between social behaviours and health care constraints. *Social Science & Medicine, 38*(8), 1069–1073.

Janes, C. R., & Chuluundorj, O. (2004). Free markets and dead mothers: the social ecology of maternal mortality in post-socialist Mongolia. *Medical Anthropology Quarterly, 18*(2), 230–257.

Jenkins, G. L., & Inhorn, M. C. (2003). Reproduction gone awry: medical anthropological perspectives. *Social Science & Medicine, 56*, 1831–1836.

Kaufert, P. A., & O'Neil, J. (1993). Analysis of a dialogue on risks in childbirth: clinicians, epidemiologists and Inuit women. In S. Lindenbaum, & M. Lock (Eds.), *Knowledge, power and practice: The anthropology of medicine and everyday life* (pp. 32–54). Berkeley: University of California Press.

Kaufman, S. R., & Morgan, L. M. (2005). The anthropology of the beginnings and ends of life. *Annual Review of Anthropology, 34*, 317–341.

Kaye, D., Mirembe, F., Aziga, F., & Namulema, B. (2003). Maternal mortality and associated near-misses among emergency intrapartum obstetric referrals in Mulago Hospital, Kampala, Uganda. *East African Medical Journal, 80*(3), 144–149.

Khan, K. S., Wojdyla, D., Say, L., Gulmezoglu, A. M., & Van Look, P. F. (2006). WHO analysis of causes of maternal death: a systematic review. *Lancet, 367*(9516), 1066–1074.

Kielmann, K. (2002). Theorising health in the context of transition: the dynamics of perceived morbidity among women in peri-urban Maharashtra, India. *Medical Anthropology, 21*(2), 157–207.

Layne, L. (2003). *Motherhood lost: A feminist account of pregnancy loss in America*. New York: Routledge.

Leick, N., & Davidsen-Nielsen, M. (1991). *Healing pain: attachment, loss and grief therapy*. London: Tavistock/Routledge.

Lewis, G. (2003). Beyond the numbers: reviewing maternal deaths and complications to make pregnancy safer. *British Medical Bulletin, 67*(1), 27–37.

Lock, M., & Kaufert, P. A. (Eds.). (1998). *Pragmatic women and body politics*. Cambridge: Cambridge University Press.

Maguire, P., & Murray Parkes, C. (1998). Coping with loss: surgery and loss of body parts. *British Medical Journal, 316*(7137), 1086–1088.

Mantel, G. D., Buchmann, E., Rees, H., & Pattinson, R. C. (1998). Severe acute maternal morbidity: a pilot study of a definition for a near-miss. *British Journal of Obstetrics and Gynaecology, 105*(9), 985–990.

Marris, P. (1974). *Loss and change*. London: Routledge & Kegan Paul.

Marris, P. (1986). *Loss and change*. London: Routledge and Kegan Paul. revised ed.

Ministère de la Santé Burkina Faso. (2006). Arrêtte 2006-002/PRES/PM/MS portant liste des accouchements et des soinds obstétricaux et néeonataux d'urgence subventionnés et leurs tarifs dans les formations sanitaires publiques de l'Etat. Burkina Faso.

Murray, C. J. L. (1996). Rethinking DALYs. In C. J. L. Murray, & A. D. Lopez (Eds.), *The global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2030*. Cambridge, MA: Harvard University Press.

Murray, C. J. L., Salomon, J. A., Mathers, C. D., & Lopez, A. D. (2002). *Summary measures of population health*. Geneva: World Health Organization.

Nichter, M. (2008). *Global health: Why cultural perceptions, social representations, and biopolitics matter Tuscon*. University of Arizona Press.

Nichter, M., & Kendall, C. (1991). Beyond child survival: anthropology and international health in the 1990s. *Medical Anthropology Quarterly, 5*(3), 195–203.

Ouattara, F., & Storeng, K. T. (2005). L'enchainement de la violence familiale et conjugale. Les grossesses hors mariage et ruptures du lien social au Burkina Faso. *Bulletin de l'APAD (Association Euro-Africaine pour l'Anthropologie du Changement Sociale et du Developpement), 27–28*, 75–91.

Reidpath, D. D., Allotey, P. A., Kouame, A., & Cummins, R. A. (2003). Measuring health in a vacuum: examining the disability weight of the DALY. *Health Policy Plan, 18*(4), 351–356.

Rock, M. (2000). Discounted lives? Weighing disability when measuring health and ruling on "compassionate" murder. *Social Science & Medicine, 51*(3), 407–417.

Ronsmans, C., Etard, J. F., Walraven, G., Hoj, L., Dumont, A., de Bernis, L., et al. (2003). Maternal mortality and access to obstetric services in West Africa. *Tropical Medicine & International Health, 8*(10), 940–948.

Ronsmans, C., & Graham, W. J. (2006). Maternal mortality: who, when, where, and why. *Lancet, 368*(9542), 1189–1200.

Say, L., Pattinson, R. C., & Gulmezoglu, A. M. (2004). WHO systematic review of maternal morbidity and mortality: the prevalence of severe acute maternal morbidity (near miss). *Reproductive Health, 1*(1), 3.

Souza, J. P., Cecatti, J. G., Parpinelli, M. A., de Sousa, M. H., & Serruya, S. J. (2006). [Systematic review of near miss maternal morbidity]. *Cad Saude Publica, 22*(2), 255–264.

Souza, J. P., Cecatti, J. G., Parpinelli, M. A., Krupa, F., & Osis, M. J. (2009). An emerging "maternal near-miss syndrome": narratives of women who almost died during pregnancy and childbirth. *Birth, 36*(2), 149–158.

Storeng, K. T., Baggaley, R. F., Ganaba, R., Ouattara, F., Akoum, M. S., & Filippi, V. (2008). Paying the price: the cost and consequences of emergency obstetric care in Burkina Faso. *Social Science & Medicine, 66*(3), 545–557.

UNDP. (2009). *Human Development Report 2009. Overcoming barriers: Human mobility and development*. New York: United Nations Development Program.

Wall, L. L. (1998). Dead mothers and injured wives: the social context of maternal morbidity and mortality among the Hausa of northern Nigeria. *Studies in Family Planning, 29*(4), 341–359.

WHO. (2009). *World health statistics 2009*. Geneva World Health Organization.