Social Science & Medicine 73 (2011) 1003–1013

Contents lists available at ScienceDirect

Social Science & Medicine

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

Difficulties leaving home: A cross-sectional study of delays in seeking emergency obstetric care in Herat, Afghanistan

Atsumi Hirose [a,b,*], Matthias Borchert [a,c], Homa Niksear [d], Ahmad Shah Alkozai [e], Jonathan Cox [a], Julian Gardiner [a,f], Khadija Ruina Osmani [g], Véronique Filippi [a]

[a] London School of Hygiene & Tropical Medicine, UK
[b] U.S. Centers for Disease Control and Prevention, USA
[c] Institute of Tropical Medicine and International Health, Charité – Universitätsmedizin, Berlin, Germany
[d] Herat Regional Hospital, Afghanistan
[e] World Vision International, Afghanistan
[f] Birkbeck College, UK
[g] Faculty of Medicine, Herat University, Afghanistan

ARTICLE INFO

Article history:
Available online 29 July 2011

Keywords:
Afghanistan
Near-miss
Maternal mortality
Delays
Antenatal care
Birth plan
Social resources
Obstretrics
Care-seeking

ABSTRACT

This study used an analytical cross-sectional design to identify risk factors associated with delays in care-seeking among women admitted in life-threatening conditions to a maternity hospital in Herat, Afghanistan, from February 2007 to January 2008. Disease-specific criteria of 'near-miss' were used to identify women in life-threatening conditions. Among 472 eligible women and their husbands, 411 paired interviews were conducted, and information on socio-demographic factors; the woman's status and social resources; the husband's social networks; health care accessibility and utilisation; care-seeking costs; and community characteristics were obtained. Decision and departure delays were assessed quantitatively from reported timings of symptom recognition, care-seeking decision, and departure for health facilities. Censored normal regression analyses suggest that although determinants of decision delay were influenced by the nature and symptoms of complications, uptake of antenatal care (ANC) and the birth plan reduced decision delay at the time of the obstetric emergency. Access to care and social networks reduced departure delay. Programmatic efforts may be directed towards exploiting the roles of ANC and social resources in facilitating access to emergency obstetric care.

Published by Elsevier Ltd.

Introduction

Most maternal deaths in resource-poor countries are preventable if women suffering complications during pregnancy and childbirth receive emergency obstetric care (EmOC) in a timely manner (Paxton, Maine, Freedman, Fry, & Lobis, 2005). EmOC interventions range from administration of antibiotics, oxytocic drugs, and anticonvulsant and manual procedures to blood transfusion and surgery. They are usually provided in health centres and hospitals.

In 1994, Thaddeus and Maine proposed an analytical framework to identify barriers to EmOC services. Called the 'three delays' model, this framework has been widely adopted by the safe motherhood community and is frequently quoted by public health professionals despite its restricted focus on emergency curative services as opposed to primary and secondary prevention. The framework distinguishes three time periods: (1) From onset of complications to decision to seek care, (2) from decision to reaching the appropriate health facility, and (3) from arrival in facility to treatment. Factors prolonging the first period are complex and often context-specific, including a woman's status in her family and community, income constraints, perceived high costs of services or poor quality of care, traditional beliefs, and low awareness of danger signs and symptoms of severe complications (Koblinsky et al., 2006). The second period is often prolonged by travel distance and lack of facilities and transportation means. The third period relates to the quality of health care services (Thaddeus & Maine, 1994).

In recent years, the focus of the safe motherhood community has shifted from two opposing paradigms (EmOC for complications

* Corresponding author. U.S. Centers for Disease Control and Prevention, 1600 Clifton Road, NE (MS-A06), Atlanta, GA 30329, USA.
E-mail address: AHirose@cdc.gov (A. Hirose).

0277-9536/$ – see front matter Published by Elsevier Ltd.
doi:10.1016/j.socscimed.2011.07.011

vs. skilled birth attendance for all births) to a more comprehensive approach bringing these two strategies together (Campbell & Graham, 2006). Nonetheless, the three delays framework has continued relevance in regions where many women continue to deliver at home. Hospital audits conducted in these regions have persistently documented a considerable number of moribund women reaching facilities ('near-miss upon arrivals'), renewing calls for research into care-seeking delays (Adisasmita, Deviany, Nandiaty, Stanton, & Ronsmans, 2008; Filippi, Richard, Lange, & Ouattara, 2009; Roost, Altamirano, Liljestrand, & Essen, 2009).

While many quantitative, qualitative, or mixed-method studies have investigated care-seeking behaviours for maternity services, studies quantifying care-seeking delays for EmOC are mostly maternal deaths case series, describing types or causes of delays without an explicit comparison group (Barnes-Josiah, Myntti, & Augustin, 1998; Orji, Ogunlola, & Onwudiegwu, 2002; Supratikto, Wirth, Achadi, Cohen, & Ronsmans, 2002; Urassa, Massawe, Lindmark, & Nystrom, 1997). The few existing analytic studies explicitly comparing women with and without delays have methodological limitations, such as small sample sizes (Okonofua, Abejide, & Makanjuola, 1992; Okusanya, Okogbo, Momoh, Okogbenin, & Abebe, 2007). While descriptive case series are useful in formulating hypotheses, analytic study designs can help identify delay factors that are amenable to interventions, by comparing the distribution of the outcome value between risk and non-risk groups. Our quantitative study used such a study design to identify risk factors predisposing women to delay in Afghanistan.

Afghanistan is a challenging environment for women wishing to obtain care. It was ranked 174th out of 178 countries on the Human Development Index after decades of conflicts, during which the country was persistently hindered from socioeconomic development. The Afghan health care system was almost completely destroyed when the Taliban regime ended in 2001. The population's health status is reportedly one of the worst in the world, with the national maternal mortality ratio (MMR) at 1600–2200 per 100,000 live births (Bartlett et al., 2005). The Afghan Ministry of Health (MOH) and its international partners have started to rebuild the health system by contracting out the delivery of a 'Basic Package of Health Services' (BPHS) to nongovernmental organisations (NGOs) (MOH, 2003). The BPHS consisted of four levels of services: (1) Health posts providing limited care in their smaller communities; (2) outpatient Basic Health Centres serving a larger population, with a referral connection to Comprehensive Health Centres (CHCs); (3) CHCs offering a wider range of services, including basic management of obstetric complications; and (4) District Hospitals providing all services in BPHS, including EmOC. This health care provision model has quickly expanded services and improved the accessibility and quality of care to the poor, yet the provision of EmOC in district hospitals remains inadequate (Hansen et al., 2008). Despite the opening of midwifery schools across the nation, utilisation of skilled birth attendants (SBA) (i.e., a person with professionally obtained midwifery skills) is low due to widespread poverty, difficult geographical access, and strict gender rules (Mayhew et al., 2008). Increasing the accessibility and uptake of EmOC services is essential to reducing maternal deaths in Afghanistan (Chowdhury, Ahmed, Kalim, & Koblinsky, 2009; Fournier, Dumont, Tourigny, Dunkley, & Drame, 2009).

Afghanistan's social system is strongly patriarchal. Men control women's mobility, as the tribal honour codes prescribe that men protect women's chastity, which is tied to family honour. Kinship relations are central to Afghans' lives. Marriage usually involves a bride price payment. The poor may exchange daughters to cancel out such payments. Marriage between cousins is common because of a reduction in payment and the familiarity of the two families involved. Marriage as a way of ending a family dispute has reportedly decreased (Smith, 2009a). The way in which a woman's marriage is contracted largely determines her position in the marital home (Smith, 2009b). Marital homes are considered a suitable place to give birth.

Methods

Study setting

We conducted a cross-sectional survey between February 2007 and January 2008 of women arriving at the maternity ward of Herat Regional Hospital in life-threatening conditions. We chose Herat Hospital because it is one of the largest in the country, with 17 obstetricians and 40 beds at the time of the study. The hospital represented the only comprehensive EmOC facility in the province, and complicated cases from neighbouring rural provinces were often referred there. In 2002, the MMR in Herat province was estimated to be 593 per 100,000 live births (Amowitz, Reis, & Iacopino, 2002).

Inclusion criteria

This study included women of all ages in life-threatening conditions requiring immediate intervention to prevent their likely deaths (often referred to as 'near-miss' cases) (Say, Souza, & Pattinson, 2009). At the time of the study, the World Health Organisation (WHO) had not yet standardised near-miss criteria (Say et al., 2009). Disease-specific criteria of near-miss complications were therefore adapted from other studies conducted in resource-poor settings (Filippi et al., 2005; Prual, Bouvier-Colle, de Bernis, & Breart, 2000), which may have been less stringent than the newly established WHO criteria. Per the criteria adapted from other studies, a woman must exhibit one of the following eight conditions during pregnancy, labour, or 42 days after termination of pregnancy upon admission, irrespective of pregnancy outcome:

1. Impending rupture of uterus characterised by Bandl's ring
2. Clinical diagnosis of rupture of uterus
3. Eclampsia characterised by convulsion with urine protein of 2 + on a dipstick and diastolic blood pressure (BP) $>=$ 90 mm Hg, or convulsion or coma with or without high BP in the absence of other causes
4. Severe pre-eclampsia with diastolic BP $>$110, urine protein of 3 + or more on a dipstick, and two additional symptoms of pre-eclampsia
5. Vaginal, intra-abdominal, and concealed bleeding with an episode of shock, or requiring an IV therapy of 2000 cc or more fluids given through two or more IV lines or an emergency hysterectomy
6. Severe infection characterised by abdominal pain with temperature $>$38 °C or $<$36 °C not explained by an extra-genital infection plus two signs of severe infection, or an episode of shock.
7. Severe maternal anaemia (haemoglobin level $<$ 7 g/dl) with dyspnoea and requiring transfusion of two or more units of blood
8. Acute heart failure requiring intravenous furosemide

From the above eight criteria, ten complication types were created, by dividing the fifth criterion, haemorrhage, into three types according to the gestational age at admission. Unmarried women were excluded because we knew from experience that interviews would cause them emotional distress as well as disturbance in the ward; out of wedlock pregnancies are typically considered taboo in Afghan culture.