Case Reports in Women's Health 1 (2014) 4–7

Contents lists available at ScienceDirect

Case Reports in Women's Health

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

Monument of Love or Symbol of Maternal Death: The Story Behind the Taj Mahal

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ARTICLE INFO

Article history:
Received 21 June 2014
Accepted 10 July 2014
Available online 1 August 2014

Keywords:
Maternal health
Maternal death
Reproductive health
Birth spacing
Taj Mahal

The Taj Mahal, a wonder of the world and world heritage (cultural) site, is a magnificent specimen of Mughal architecture [1]. Most people know the Taj Mahal, a mausoleum in Agra, India, as a monument of love symbolizing the eternal love of a Mughal emperor Shah Jahan towards his wife Mumtaz. However, not many are aware that the Taj Mahal also tells the story of maternal death[1] and, by extension, a host of issues surrounding it that is emblematic of reproductive health in India.

Mumtaz died at young age of 39 years on June 17, 1631 [2] due to postpartum haemorrhage [3] and from complications related to repeated childbirth [4]. These were preventable causes of maternal mortality, which are still common in India today. Despite great advances in medicines and technology in the last 382 years since then, many women in India still suffer the fate of Mumtaz (maternal death). The maternal mortality ratio in India is 212 [5], one of the highest in Asia, and which has remained stubbornly high for years. The leading causes of maternal deaths in India are postpartum haemorrhage leading to severe bleeding, sepsis, unsafe abortions, eclampsia, obstructed labour, etc.

Despite being the first country in the developing world to have an extensive network of primary health care units, well-articulated policy statements as well national disease control programmes, including family planning programme, India continues to have a high maternal mortality rate. The country does not lack good policies, but in the case of maternal mortality, surely it can be argued that perhaps a closer look at its delivery system, that is, the health system as a whole, is warranted if fewer women are to suffer the fate of Mumtaz.

1. The Story Behind Taj Mahal

The Mughal emperor Shah Jahan (born in 1592 [2], reigned 1628–58) had built Taj Mahal in memory of his wife, Arjumand Banu Begum (1593–1631) [2], more popularly known as Mumtaz Mahal. At a young age, Shah Jahan saw Arjumand at the Royal Meena Bazaar on the streets of Agra and fell in love with her [6]. In 1607, Shah Jahan had been betrothed to Arjumand Banu Begum, who was just 14 years old at that time [2]. It took five years for Shah Jahan to marry his beloved Mumtaz Mahal. Meanwhile, he was married to a Persian Princess Quandary Begum due to political reasons [2,6]. Shah Jahan at the age of 21 years married Arjumand Banu Begum (19 years) on an auspicious day on 10th May 1612 [2,6,7].

Arjumand was very compassionate, generous and demure [6]. She was also involved in administrative work of the Mughal Empire and was given royal seal, Muhr Uzah by Shah Jahan [6]. She continually interacted on behalf of petitioners and gave allowances to widows [6,7]. She always preferred accompanying Shah Jahan in all his military/war campaigns [6]. It was during one of these campaigns (against Khan Jahan Lodi, a treacherous renegade who had raised a large army in the Deccan), while giving birth to their 14th child (daughter Gauharara Begum) that Arjumand died at the young age of 39 years on 17th June 1631 [2,6] due to postpartum haemorrhage [3] and other complications [4]. After 30 h of delivery pain [8], she died, despite the effort by Sati-un-Nisa, the queen's favourite lady-in-waiting, and Wazir Khan, her beloved doctor. Shah Jahan called a number of *dais* (midwives) to attend to Arjumand but all efforts were in vain. Shah Jahan was inconsolable at the untimely death of his beloved wife and announced days of state mourning. The entire kingdom was ordered into mourning for two years [6].

> *Distressed by the death of Mumtaz, Shah Jahan built Taj Mahal in her memory. However, on the other side of the world during the same century (17th century) in Sweden, the Queen Ulrika Eleonora, also distraught by losing people close to her, took a different approach than that of the Shah Jahan in India. She put out a mandate to her Swedish physicians to create a plan through which one or two women from each town would be required to come to Stockholm for midwifery training. It was a medical doctor Johan von Hoorn that started midwifery school in Stockholm in 1708.*

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[1] A maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, regardless of the site or duration of pregnancy, from any cause related to or aggravated by the pregnancy or its management.

http://dx.doi.org/10.1016/j.crwh.2014.07.001

Arjumand's death from haemorrhage could have been prevented if there was adequate and prompt replacement of blood loss by transfusion of safe blood. According to research published in the Lancet, haemorrhage and high blood pressure are the main causes of maternal deaths in developing countries [9]. In her 19 years of marriage, Arjumand bore Shah Jahan 14 children, 7 of whom died in infancy [2] while four sons and three daughters survived [2]. Arjumand's death was undoubtedly a maternal death[2]. Table 1 shows how long her fourteen children survived. Table 1 also shows that Arjumand had one child nearly every year until she died having her fourteenth child.

2. Mumtaz's Death and Taj Mahal — A Story of Maternal Death

Though one can say that family planning in the modern scientific sense of the term was probably not available during Mumtaz's time, but the incidence of frequent pregnancies and deliveries has not changed much. Many more women are dying of maternal death because of this and host of other reasons. This case of Arjumand's maternal death, which is 382 years old is still very relevant today and compels us to revisit and examine several issues, to ensure that no women should die while giving birth to a life.

These issues can be examined from three perspectives. First, the poor family planning services to women of reproductive age and, therefore, the issue of unmet need. Second, the frequency of pregnancy as a safeguard against infant mortality and child survival, especially between 0 to 5 years of age. Third, the acceptance of birth spacing. Couples who space the birth of their children 3 to 5 years apart increase their children's chances of survival, and mothers are more likely to survive. Over the years, research has consistently demonstrated that, when mothers' space births at least 2 years apart, their children are more likely to survive and to be healthy [10]. Researchers suggest that 2 1/2 years to 3 years between births are usually best for the wellbeing of the mother and her children. If a parent has experienced a miscarriage or loss of a child, they may need time to grieve, evaluate their risks and work through their fears and anxieties before considering a future pregnancy. Short intervals between births can be bad for the mother's health. There is a greater risk of bleeding in pregnancy, premature rupture of the bag of waters and increased risk of maternal death [11]. It is established that birth spacing reduces the chances of infant mortality and maternal death. Birth spacing terms/intervals can be measured in three ways.

1. Birth-to-birth interval ("birth interval") — the period between two consecutive live births, from birth date to birth date.
2. Birth-to-conception interval — the period between a live birth or stillbirth and the conception of the next pregnancy.
3. Inter-pregnancy interval — the period from conception of the first child to conception of the next.

When we analyse the details of Arjumand's pregnancies against the birth spacing terms, we get the following information for each of the 14 children from Table 2.

From Table 2, it can be assumed that the absence of birth-spacing between the deliveries led to negative health effect such as anaemia on Mumtaz's health and can be one of the reasons for her death. Generally, in Indian conditions, the gap between two subsequent deliveries should be at least five years. Prescribed gap of three years between two subsequent child births by the medical professionals is more valid for the Western countries. In Indian conditions, women have low haemoglobin (9 g/cm^3) count, whereas in western countries, women have a sufficient count of haemoglobin (12 g/cm^3). Anaemia is the most prevalent cause of maternal death rather than postpartum haemorrhage (PPH).

Table 1
Arjumand Banu Begum's children.Source: Shah Jahan Nama [2] and http://www.uq.net.au/~zzhsoszy/ips/misc/mughal.html (Accessed on 17 May 2008).

Year	Arjumand's Age	Name of children (date of birth–date of death)	Life of children (in years)
1613	20	Hur al-Nissa Begum (30 March 1613–14 June 1616)	03
1614	21	Jahanara Begum (2nd April 1614–6 September 1681)	67
1615	22	Dara Shukoh (30 March 1615–30/31 August 1659)	44
1616	23	Sultan Shah Shuja (3 July 1616–1660)	44
1617	24	Roshanara (3 September 1617–1671)	54
1618	25	Aurangzeb (3 November 1618–21 February 1707)	89
1619	26	Ummid Baksh (18 December 1619–March 1622)	03
1621	28	Surraya Banu (10 June 1621–28 April 1628)	07
1622	29	Shahzada (name unknown) (1622–1622)	00
1624	31	Murad Baksh (8th September 1624–14 December 1661)	37
1626	33	Luft Allah (4 November 1626–14 May 1628)	02
1628	35	Daulat Afza (9 May 1628–13 May 1629)	01
1630	37	Husnara Begum (23 April 1630–died young)	00
1631	38	Gauharara Begum (17 June 1631–1706)	75

2.1. Causes of Arjumand's Death

Based on the above analysis, one can predict the possible contributing causes/factors behind Mumtaz's death. These may be,

1. The difficulty in predicting/preventing obstetric complications
2. Lack of access to maternal health services
3. Poor health before and during pregnancy
4. The three delays[3]
5. Distance from health services
6. Lack of transportation
7. Lack of decision-making power

Being the first lady in the empire, the above factors may not be completely applicable in the case of Arjumand. However, several possible and definite causes of Arjumand's death can be considered and classified in three categories such as, bio-medical, psychological and sociological causes. Physiological causes of Arjumand's death were postpartum haemorrhage, anaemia and repeated child bearing without birth spacing. Psychological causes may be anxiety and stress. One can easily imagine the stress on a woman who is pregnant, staying in battlefield with continuous fear of losing her husband and near and dear ones. And third one is definitely a social-cultural and religious cause. Being a follower of Islam, it must have been difficult for a woman to think about contraception and pregnancy regulation.

Besides the above mentioned reasons which led to Arjumand's death, a host of other factors might have played an equally important role, such as lack of maternal health services, transportation system and lack of decision making power. Although, there is not much information about maternal health services during the Mughal period, it seems that health and medical facilities were good and people enjoyed decent health as reported by many foreign travellers [12]. Childbirth and maternal health care and services were generally provided by household women and traditional birth attendants (Dais). Despite the many changes occurring in the Western world from the 12th century onwards, this situation continued in India through the early part of the 19th century. In fact,

[2] Maternal deaths are defined as those that are due to complications of pregnancy, childbirth, or the period immediately after childbirth. Maternal death or 'obstetrical death' is the death of a woman during or shortly after a pregnancy. According to the WHO, 'a maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes'.

[3] The three delay model proposes that pregnancy-related mortality is overwhelmingly due to delays in: (1) deciding to seek appropriate medical help for an obstetric emergency; (2) reaching an appropriate obstetric facility; and (3) receiving adequate care when a facility is reached.

Table 2
Birth spacing/interval between Arjumand Banu Begum's children.

Date of conception on assumption of 40 weeks of normal pregnancy	Name/date of birth	Birth spacing					
		In days			In months		
		Birth to birth interval	Birth-to-conception interval	Inter-pregnancy interval	Birth to birth interval	Birth-to-conception interval	Inter-pregnancy interval
22 Jun 1612	Huralnissa — 30 Mar 1613	–	87	–	–	3	–
25 Jun 1613	Jahanara — 2nd Apr 1614	368	81	368	12	3	12
22 Jun 1614	Dara Shukoh — 30 Mar 1615	362	180	362	12	6	12
26 Sep 1615	Shah Shuja — 3 July 1616	461	146	461	15	5	15
26 Nov 1616	Roshanara — 3 Sep 1617	427	145	427	14	5	14
26 Jan 1618	Aurangzeb — 3 Nov 1618	426	129	426	14	4	14
12 Mar 1619	Ummid Baksh — 18 Dec 1619	410	259	410	14	9	14
02 Sep 1620	Surraya Banu — 10 Jun 1621	540	–	540	18	–	18
–	Shahzada — 1622	–	–	–	–	–	–
02 Dec 1623	Murad Baksh — 8 Sep 1624	–	506	–	–	17	–
27 Jan 1626	Luftallah — 4 Nov 1626	787	271	787	26	9	26
02 Aug 1627	Daulat Afza — 9 May 1628	552	433	552	18	14	18
16 Jul 1629	Hussainara — 23 Apr 1630	714	139	714	24	5	24
09 Sep 1630	Gauhar Ara — 17 Jun 1631	420	–	420	14	–	14
Mean		497	216	497	17	7	17

Birth spacing.
Mean birth-to-birth interval — 16.6 months.
Mean birth-to-conception interval — 7.2 months.
Mean inter-pregnancy interval — 16.6 months.
Pregnancy period (14 children × 9 months) — 126 months, 10.5 years.
Death of children (0–5 years) — 6 children.
Mean life expectancy (425 years/14 children) — 30.35 years.

various accounts of the late 17th century suggest that giving birth in India was no more hazardous than it was in England and that women were 'quick in labour' [13].

Public hospitals were established during Mughal period. Jahangir (son of Akbar) stated in his autobiography that on his accession to the throne, he ordered the establishment of hospitals in large cities at government expense [14]. Although the supply of local physicians was not plentiful, the local physicians were able to deal with normal problems. As early as 1616, they knew the important characteristics of the bubonic plague and suggested suitable preventive measures [15]. The use of medicines had been fairly well developed among the Hindus, but dissection was considered to be irreligious. The Muslims, who did not have this restriction, performed a number of operations. As Elphinstone pointed out, "their surgery is as remarkable as their medicine, especially when we recollect their ignorance of anatomy. They cut for the kidney stone disease (Pathri), couched for the cataract, and extracted the foetus from the womb, and their early works enunciate no less than one hundred and twenty-seven surgical works" [16].

3. Lessons From Mumtaz's Death — No Women Should Die While Giving a Life

In the last 382 years, has there been a perceptible change in maternal health in India? While the country has grown by leaps and bounds, not much has changed in rural India so far as maternal health services are concerned. Health facilities can be state-of-the-art in urban areas, but in the villages, a host of challenges are present for a pregnant woman seeking proper maternal care and services. Poverty and illiteracy influence both expectations of and demand for quality services at health facilities. The sub-centres and the primary health centres are at the frontline for these women, yet they have failed to inspire confidence in health care delivery for a variety of reasons, not least the women's blatant lack of decision-making power of their reproductive rights.

For women who are the backbone of families, the much-touted 'basic unit of society', giving birth in the 21st century should be an occasion to celebrate new life, a manifestation of their special role to bear the next generation. Although Mumtaz was an empress and much loved by her besotted emperor, her powerlessness in reproductive choices was quite evident. Ordinary poor women would have the double burden of their gender constraints along with poverty and illiteracy impinging on health. A modern state cannot continue this injustice, which even an empress went through three centuries back. They should not lose their lives because their health providers feel hopeless at a health system that cannot deliver basic maternal services that is rightfully theirs.

There is a need to innovate and think differently — what Queen Ulrika Eleonora did three centuries back in Sweden. It was her visionary thinking and leadership which led to improve maternal health. Today, Sweden maternal mortality is less than 5 per lakh live births. Learning a lesson from the past, we should do the following to ensure that no women should die giving a life.

- Empower household and communities
- Demand generation for better maternal health services
- Creating a shared vision and aligning values among all stakeholders

Although the government is trying to improve maternal health care and services under the National Health Mission Programme, there is need to accelerate these. Some of these are:

- Ensure hundred percent institutional delivery by skilled attendant nurses or doctors at birth for all women.
- Ensure that all health care providers (midwives, nurses, auxiliaries, clinical officers and physicians) who attend births, both in facilities or at home, have the skills to manage normal labour and can perform active management of the third stage of labour.
- Ensure that the drugs, equipment and supplies necessary for active management of the third stage of labour are available.

India can reduce maternal death by learning lessons from the past and by improving maternal health care services, but it needs political and societal commitment.

Conflict of Interest

There is no conflict of interest.

Acknowledgement

The author is thankful to Professor Jay Satia for the idea to develop this paper and Ms. Moi Lee Liow for her comments and suggestions.

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