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Improving Obstetrical Critical Care in Developing Nations

A Thematic Review of Challenges and Solutions

ringing down maternal morbidity and mortality rates and thereby improving reproductive health services has been a major concern in developing nations for the past few decades. In spite of adopting on the various measures and implementing new strategies, the adversity in maternal health has not been managed entirely. This thematic review is an attempt to briefly elaborate on the various challenges encountered in improving obstetrical critical care and also to outline potential solutions to these maternal health challenges.

Introduction and Epidemiological Evidence

Maternal mortality is a major concern in developing nations in spite of various advancements in the medical field (Bajwa SK et al. 2010, 2012). WHO has laid down 2015 as the target year to bring down substantially the level of maternal mortality in developing nations, though achieving this objective so soon seems impossible.

Apathy in obstetrical critical care in developing countries is reflected in the fact that these nations account for 99% of overall maternal mortality. The scenario is worst in African and South Asian countries, where incidences of maternal deaths reach almost two thirds of all the maternal deaths in the world. Only 0.2–0.9% of total obstetrical patients may require intensive care unit (ICU) admission in the US, which corresponds roughly to 40,000-120,000 women in association with 4.3 million births per year (Munnur U et al. 2005; Madan I et al. 2009). Similar data from developing nations is difficult to derive but results from isolated studies have shown very high mortality of obstetric patients admitted to the ICU. Developing countries' governments from time to time have implemented numerous reproductive health policies and reproductive health programmes; however, the statistical figures released by WHO for 2008 in relation to emergency obstetrical critical care have portrayed a dismal picture. Emergency medicine is still in its infancy days in South Asian and other developing countries compared with developed nations like Australia, Canada, the US and the UK (Fell DB et al. 2005; Fowler SJ 2005; Germain SJ et al. 2006; Madan I et al. 2009). Improvement of obstetrical critical care in developing nations is studded with numerous challenges and the implementation of concrete solutions is needed (Tang LC et al. 1997; Dias de Souza et al. 2002; Karnad DR et al. 2004).

Challenges in Improving Obstetrical Critical Care

Numerous guidelines have been published by various international obstetrical and critical care societies but the successful application of these guidelines has been very difficult in developing nations (Bajwa SK et al. 2010; Bajwa SK et al. 2012). Also, to date there is no universal consensus on the adoption of a particular scoring system for critically ill obstetric patients (El-Solh AA et al. 1996; Penny G et al. 2007). The partial to complete failure of these implemented measures can be attributed to various factors, such as the following:

• Shortage of Quality Manpower

A poor patient to doctor ratio is a common dismal scenario in many developing countries. At present, specialist intensive care services are available only in few of the urban health centers of developing nations (Bajwa SK et al. 2010). The concept of a dedicated obstetrical critical care unit has come up recently and is yet to take momentum in these nations (Gupta S et al. 2011).

• Economic Constraints and Poverty

Countries of South Asia are experiencing a very bad gross domestic product (GDP) ratio and poverty is discouraging an early treatment seeking behaviour. It is only when a clinical condition gets out of control that people in these poverty stricken populations approach medical service providers for treatment (Bajwa SK et al. 2010). Many of these patients are so poor that earning daily bread is a huge struggle let alone the bearing of expenses incurred on critical care services.

• Illiteracy and Attitude

The lower literacy rate among populations of developing nations has further increased the obstacles for delivering effective obstetrical critical care services. The status of woman and the existence of gender bias in these societies, with families strongly desiring a male baby, chiefly reflect the mental attitude of the majority of the inhabitants of South Asia. This discriminatory ideology of gender preference is responsible for a higher incidence of septic abortions and other pregnancy related complications (Bajwa SK et al. 2010).

• Lack of Clinical Awareness

Clinical awareness about the various ailments of pregnancy is lacking in both literate and illiterate urban and rural populations. The majority of these people do not take any symptom or disease during pregnancy seriously and only when it reaches alarming proportions do they seek medical advice (Perez A et al. 2006; Faponle AF et al. 2007; Baloch R et al. 2010). This leads to delays in managing critically ill obstetric patients, thereby increasing morbidity and mortality. These complications can be further enhanced if such patients are treated by quacks which can create irreversible complications.

• Transport and Communication Snags

Many villages and remote areas of both African and South Asian countries are not properly connected with cities. As such, it becomes highly difficult to transport critically ill obstetric patients to health centres for timely intervention (Okafor UV et al. 2005; Baloch R et al. 2010). At times, low affordability of communication gadgets and networks also hampers the timely delivery of critical care health services (Guise JM 2007).

• Customs, Traditions and Socio-Behavioural Factors

Developing nations exhibit a wide variety of cultural and social practices, which somehow are largely contradictory to evidence based approaches for management of pregnant patients. Due to these socio behavioural attitudes, urgent medical and obstetrical care may suffer.

• Health Policies

In spite of these countries implementing various reproductive health policies, not much visible improvement has been seen (Baloch R et al. 2010; Bajwa SK et al. 2010). Failure of these policies can be attributed to various administrative, social, attitudinal, economic and political factors, which are difficult to elaborate on in this thematic review. These health policies and programmes should be reviewed periodically in order to incorporate new plans and strategies.

• Lack of Coordinated Activities

One of the biggest reasons for partial to complete failure of these health policies includes gross incoordination among different health providers. The unavailability of clear-cut guidelines and protocols related to obstetrical critical care is one of the major reasons for this. As such, treatment patterns are very subjective and vary widely among different setups. This is highly detrimental in providing quality reproductive health services.

• Poor Antenatal Care

Various physiological and pathological fluctuations can be experienced in the antenatal period. This mandates regular check-ups to ensure a healthy mother and the delivery of a healthy baby. In the majority of instances, parturients present to the health centres only during the late stages of labour, without any previous antenatal check-up (Perez A et al. 2006; Faponle AF et al. 2007). Such patients can have high morbidity and mortality if they have comorbid diseases and obstetrical complications (Guise JM et al. 2007). In countries like India, one third of pregnant females never present themselves for any kind of antenatal check-up. Statistical figures of National Health and Family Survey, 2006, report that astonishingly a mere 7% of pregnant females come for third trimester antenatal check-ups.

• Inadequate Medical Facilities

Besides shortages of qualified manpower and poor antenatal care, inadequate medical facilities further compound the problem. In rural areas, apathy is highlighted by the fact that not many facilities and drugs for managing critically ill obstetric patients are available at the majority of health centres.

• Inadequate Infrastructure

The majority of the population in developing nations resides in rural areas, but most tertiary care centers and bigger hospitals and institutes are located in urban areas. As such, rural health infrastructure is grossly deficient in managing critically ill patients. It is difficult for the respective governments to set-up ICU's amid the circumstances that prevail in such areas.

• Attitudinal Differences

Attitudinal differences are prevalent in all strata of society, whether among the general public, opinion makers, policy makers, doctors or paramedical staff. They arise because of previously mentioned factors such as poverty, illiteracy, economic constraints, shortage of manpower and so on, and they can be highly detrimental to delivering quality critical care services.

• Under-Reporting and Non-Reporting of Obstetrical Data

Developed nations have been able to adopt appropriate measures to improve reproductive health services on the basis of data from observational, retrospective and randomised prospective trials (Harris CM et al. 2002; Zeeman GG et al. 2003). On the other hand, scarce and sporadic data from developing nations has not been helpful in bringing any significant improvement in reproductive health services as it reveals only partial to minimal information regarding the actual state of obstetrical critical care. It becomes extremely difficult for health administrators and policy makers to formulate and implement appropriate corrective measures to bring an improvement in overall maternal health.

• Comorbidities

The higher incidence of maternal mortality in developing nations is mainly due to severity of comorbid medical and surgical disorders which can complicate pregnancy by inflicting direct insults or leading to intensive care admissions. Various cardiac pathologies, respiratory disorders, haematological disturbances, endocrinological disorders, sepsis, altered metabolic profiles, neurological diseases, cerebro- vascular accidents, renal diseases, hepatic disorders, trauma and so on can be devastating to both mother and the foetus if not timely diagnosed and appropriately managed.

• ICU Challenges

Critically ill obstetric patients are usually young and have a good prognosis if timely therapeutic interventions are administered. This requires dedicated efforts from teams of obstetricians, anaesthesiologists, intensivists and pediatricians to plan and design the various structural and functional aspects of the obstetrical ICU.

• Political Unrest

The political situation of a country can have a direct and indirect impact on the health services of these developing nations. The ever-present political turmoil in South Asian and some African countries has gradually upset the provision of qualitative delivery of obstetrical critical care services.

Potential and Possible Solutions

To fulfill the targets set by WHO in decreasing maternal morbidity and mortality throughout the globe, concrete measures have to be taken, particularly in the developing nations with the highest maternal deaths. A multidisciplinary approach, coordinated and dedicated efforts from government officials, doctors, paramedical staff and most importantly active participation of society and the general public are required. Shortages of manpower can possibly be overcome by:

• Recruiting new specialists by giving various incentives;

• Implementing a rotation policy so as to deploy specialist doctors for a compulsory spell of at least two to three years in rural areas;.

• Giving higher pay scales and salaries to doctors posted in rural areas;

• Providing accommodation and other facilities at a minimum cost to doctors posted in rural areas;

• Regularly posting postgraduate students to these peripheral health centres on a monthly basis, under the supervision of a senior doctor; and

• Governments permitting the opening of new medical colleges only in rural areas.

In times of economic recession and crisis, governmental responsibility to improve health services is immense. Budget reallocation has to be done so as to direct maximum funds towards the management of critical care services.

A higher literacy rate in society definitely contributes towards reproductive health. Moreover, it becomes easy for doctors to make obstetrical patients clinically aware about their present condition during an antenatal visit. All patients with systemic diseases should be made aware of potential complications associated with them. Diagnostic aids, prophylactic measures and therapeutic interventions should be planned solely during these antenatal visits. Giving the contact number of doctors can be of great help in case of an emergency. Looking at customs, traditions and superstitions from a scientific angle can only be achieved by spreading literacy levels throughout society.

Means of transportation and communication can be improved with initiatives from the government. Free ambulances can be deployed at various critical focal points, facilitating attendance to critically ill patients in the shortest possible time. These ambulances should be equipped with facilities for deliveries and neonatal resuscitation. Maternal and foetal monitoring during transportation can have a significant positive impact on outcome (Elliott JP et al. 1987). In addition, helpline numbers could be displayed on the roadside, in newspapers and on television. Overall, improving logistical operations and communication networks can bring significant change.

Health policies should include launching effective programmes for all health personnel that enable learning and orientation towards obstetrical critical care. At present, developing nations mostly adopt treatment measures from the guidelines published by the American College of Critical Care Medicine. These guidelines have to be further updated as ICU admission criterion may vary significantly from one place to another. Research and data reporting should be boosted and made compulsory so as to get a real picture of obstetrical critical care.

There is an acute need to strengthen health infrastructure at grass root levels so as to ensure timely implementation of the appropriate interventions. Simple early initiatives, close monitoring and symptomatic care can help drastically in reducing maternal morbidity and mortality. To improve obstetrical critical care health services, planning should involve representatives from both developed and developing nations. They should develop new consensus with the involvement of various international communities and societies that work for the improvement of reproductive health, in which they review prevailing health scenarios, socio-political circumstances and the availability of resources. The practical and feasible application of universal guidelines could be enabled, thus aiding the provision of quality care in high risk obstetrical emergencies.

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