



AN EPIDEMIOLOGICAL STUDY OF MORBIDITY STATUS OF PREGNANT WOMEN LIVING IN URBAN COMMUNITY OF ALIGARH DISTRICT (U. P.)

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ARTICLE INFO

Article History:

Received 16th May, 2016
Received in revised form 15th
June, 2016 Accepted 28th July, 2016
Published online 27th August, 2016

Key words:

Maternal morbidity, Anaemia.

ABSTRACT

In every society, the capabilities, income and status of women exert a powerful influence on health. The women need to be healthy themselves to fulfill their roles as mother and household manager. More than one third of global burden of disease for women aged 15-44 years is caused by conditions that afflict women exclusively maternal mortality, morbidity and cervical cancer or predominantly Anemia, STDs and breast cancer.

Global observations show that in developed regions maternal mortality ratio averages at 30 per 100,000 live births, in developing regions the figure is 480 for the same number of live births. India, the second most populous country, has 19% women of child bearing age (15-44 years). They do not only form a large group but they are also a vulnerable or special risk group.

India is among those countries which have a very high Maternal Mortality Rate (MMR). It was 20 per 1000 live births in 1938 and declined to 10 per 1000 live births by 1998.

There are various epidemiological factors which influence the health of expectant mothers e.g. overcrowding, poor sanitation, low socio-economic status and illiteracy etc. These problems are very common in developing countries like India. Keeping in view to the above factors it was decided to conduct a survey based study on expectant mothers living in urban community of Aligarh District (U.P.). The study was carried out on 150 eligible women and data obtained was analyzed on percentage basis.

It was concluded from the study that Avitaminosis, Anaemia, Protozoal infection was among the leading causes of maternal morbidity.

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INTRODUCTION

Severe acute maternal morbidity (SAMM), also known as "near miss", is defined as "A very ill pregnant or recently delivered woman who would have died had it not been that luck and good care was on her side"^[1,2] This concept is relatively new in maternal care, but is increasingly becoming important in areas with low maternal mortality ratios or where the geographic area is small^[3,4].

Worldwide, it is estimated that more than 50 million women suffer from poor reproductive health and serious pregnancy-related illness and disability; i.e. incidents of maternal morbidity (maternal health problems) annually^[5]. As regard mother death related to motherhood; every year, it is estimated that just fewer than 600000 women die from complications of pregnancy and childbirth. [Fig. 1] Most of the deaths occur in Africa and Asia, but the risk of dying is highest in Africa. Women in high-fertility countries in Sub-Saharan Africa have 1-in-16 (some places 1-in-13) lifetime risk of dying from maternal causes, compared with women in low-fertility

countries in Europe, who have 1-in-2,000 risk, and in North America, who have 1-in-3,700 risk of dying. [Table. 1]^[6]

Table 1 Distribution of Maternal Deaths in Developing and Developed countries

WORLD REGIONS	RISK OF MATERNAL DEATH
<i>All developing countries</i>	1 in 48
Africa	1 in 16 (1 in 13)
Asia	1 in 65
Latin America & Caribbean	1 in 130
<i>All developed countries</i>	1 in 1800
Europe	1 in 1400
North America	1 in 3700

Maternal mortality in India continues to be a major concern given the reduced social, cultural and economic status of Indian women that inhibits them from adequate access to health facilities. Though it is a major social concern, there are no reliable estimates available on maternal mortality. The estimates available are from the National Family Health Surveys (I and II) and by the Sample Registration System (SRS) for few years. The average maternal mortality ratio at

the national level estimated for 1998-99 in NFHS II was 540 per 100,000 live births which was higher than the previous estimate of 424 maternal deaths for 1992-93 (NFHS I). Though estimates are indicative, they reflect the relative neglect of women's health in India. Each year in India, roughly 30 million women experience pregnancy and 26 million have a live birth (MOHFW, 2006). With an estimated 77,000 deaths per annum, India contributes to a majority of maternal mortality burden in the region. Maternal mortality ratio, an important indicator of maternal health in India is estimated to be 301/100,000 live births. Major causes of maternal mortality in India remain hemorrhage (38%), sepsis (11%), Abortions (8%), hypertensive disorders (5%), obstructed labor (5%) and other conditions including anemia, medical disorders during pregnancy contributing to 34% of all maternal deaths (RGI-SRS 2006). Regional disparities in maternal and neonatal mortality are wide with states like Kerala having an MMR of 110/100,000 live births and others like Uttar Pradesh with 517/100,000. It is also recognized that delays in accessing specialized maternal care happen at all levels leading to maternal mortality and severe morbidity^[6].

While the number of maternal deaths is often estimated at 500,000 per year, the true number may be even larger. In many developing countries official statistics underreport maternal deaths, perhaps by one-fourth to one-half^[7]. Many maternal deaths go unreported. Others are attributed to other causes. Often deaths are reported but causes are not^[8].

Maternal mortality ratios range widely, from an estimated 12 maternal deaths per 100,000 live births in North America to more than 700 per 100,000 in some parts of sub-Saharan Africa 9,10. For the developing world as a whole, maternal mortality is estimated at more than 400 deaths per 100,000 live births, while the ratio is below 30 per 100,000 in the developed world^[10,11]. Due to poor health and poor health care, many women in developing countries face much greater risk in each pregnancy than most women in developed countries. They also face this risk more often because, on the average, they have more pregnancies. Between one-fourth and one-third of all deaths among women in their reproductive years in developing countries are related to maternity compared with only one-half of 1% in the US^[12].

There are various epidemiological factors which influence the health of expectant mothers e.g. overcrowding, poor sanitation, low socio-economic status and illiteracy etc. These problems are very common in developing countries like India. Keeping in view to the above factors it was decided to conduct a survey based study on expectant mothers living in urban community of Aligarh District (U.P.).

This study was undertaken with the aim to assess the morbidity status of expectant mothers and also to know the influence of various epidemiological factors on health leading to many disorders.

MATERIALS AND METHODS

The present study was carried out at the patients attended OPD/IPD of department of Qabalat wa-Amraz-e-Niswan, A.K. Tibbiya College hospital, AMU Aligarh in the year 2001.

Out of which 150 expectant mothers between the ages of 15-45 years were selected and evaluated for their morbidity status and the influence of various epidemiological factors on health status was also assessed.

The expectant mothers in the study were subjected to personal interview, followed by clinical examination, laboratory investigations like blood (Hb%, TLC, DLC, ESR, Blood sugar, Blood group & VDRL), urine (Routine & Microscopic examination, albumin and sugar), stool (ova and cyst), vaginal smear examination and radiological examination (USG only). The information thus collected was recorded on a pre-tested Performa. The data collected was subjected to proportion and percentage.

Table 2 Causes of morbidity in different trimesters of pregnancy

S.NO	Morbidity	Trimesters			Total	%
		I	II	III		
1.	Avitaminosis	28	30	55	113	75.3
2.	Anaemia	8	14	30	52	34.6
3.	Vaginitis&Vulvitis	19	13	14	46	30.6
4.	Amoebiasis&Giardiasis	8	11	15	34	22.6
5.	Dental Carries& Pyorrhoea	13	20	14	47	31.3
6.	Pulmonary T.B	5	10	6	21	14
7.	Albuminorrhea	2	5	7	14	9.3
8.	IUGR	0	5	7	12	8
9.	Hypertension	0	2	5	07	4.6
10.	Cholelithiasis	1	2	1	04	3.1
11.	Fibroid	1	1	0	02	1.3
12.	Syphylis	1	0	1	02	1.3

OBSERVATIONS AND RESULTS

Total 150 expectant mothers were thoroughly examined, tabulated and depicted in many graphs.

- 81.3% women were belonged to 20-35 age group.
- 16% of expectant mothers were from first trimester, 27% from 2nd trimester and 57% from 3rd trimester. 78% were multipara in which 39% had 3-5 children and 41% received antenatal care in previous pregnancies.
- Social class of these expectant mothers was also recorded as per the classification described by Prasad and found as 5.3% in class I, 31% in class II and III while 19% in class Vth.
- The literacy rate of expectant mothers was assessed and observed as 38% literate while 62% as illiterate.
- Daily calorie intake was also evaluated by 24 dietary recall method and found that only 24% expectant mothers consumed 2000-25000 Kcal/ day while rest of the mothers consuming deficient quantity as per the recommendation of ICMR (Indian Council for Medical Research) resulting in Avitaminosis in 75% expectant mothers.
- Environmental condition of 42% expectant mothers was found satisfactory.
- Hb% of 5.3% expectant mothers in 1st trimester and 20% of expectant mothers in 3rd trimester was less than 10 gm%.
- The complaints made by expectant mothers were distributed according to trimesters and found that average numbers of complaints were 3.9% in 1st trimester and 2.9% in 3rd trimester.
- Blood pressure of all expectant mothers were recorded and found that in 3rd trimester 4.6% women were hypertensive with blood pressure more than 140/90 mm Hg.
- The vaginal smear examination showed that 30.6% expectant mothers were suffered from infective vaginitis and vulvitis (Table 2).

- Urine and stool of expectant mothers were also investigated and found that 22.6% were suffered from protozoal infection (*Giardia lumbrica* and *Entamoeba histolytica*) while albumin was present in 4.6% in 3rd trimester (Table 2).
- After proper examination of women with ESR and Mountex test it was found that 14% expectant mothers were suffered from tuberculosis while 15% were diseased with bad oro-dental conditions (pyorrhea and dental carries) and 42% were found with dirty skin and dirty nails (Table 2).
- Ultrasonographic reports showed IUGR in 9.5%, cholecystitis with cholelithiasis in 3.1% and uterine fibroid in 1.5% of expectant mothers (Table 2).
- 1.5% expectant mothers were seropositive for VDRL test (Table 2).
- Protozoal infection was present in 22.6% expectant mothers mainly due to unavailability of safe drinking water, improper excreta disposal and lack of knowledge regarding hand washing practices after toilet.
- The presence of albumin in urine and an increase in blood pressure more than 140/90 mm Hg in third trimester indicates pre-eclamptic toxemia which was 4.6% mainly due to negligence in ANC (Table 2).
- Infective vaginitis, bad orodental condition, dirty nails and skin were also found in pregnant women. These conditions were arisen due to poor personal hygiene, unawareness regarding regular bath, frequent use of soap, cleaning of the mouth after each and every meal.
- IUGR was present in 9.5% women. Anemia, heavy physical work during pregnancy, toxemia, high parity, short stature close birth spacing and low education status were main causes of IUGR (Table 2).

DISCUSSION

- In the present study Avitaminosis was the chief cause of morbidity and poor health status of expectant mothers. Avitaminosis includes deficiency of vitamin A, D, B complex, C and folate and it occurs due to inadequate food intake, personal like and dislike (Food Fads) and beliefs associated with food intake during pregnancy. West.K.P *et.al* conducted a double blind, cluster randomized trial of low dose supplementation with vitamin A or beta carotene on mortality related to pregnancy in Nepal and found that mortality related to pregnancy in the placebo, vitamin A, and beta carotene groups was 704, 426, and 361 deaths per 100 000 pregnancies, yielding relative risks (95% confidence intervals) of 0.60 (0.37 to 0.97) and 0.51 (0.30 to 0.86). This represented reductions of 40% (P<0.04) and 49% (P<0.01) among those who received vitamin A and beta carotene. Combined, vitamin A or beta carotene lowered mortality by 44% (0.56 (0.37 to 0.84), P<0.005) and reduced the maternal mortality ratio from 645 to 385 deaths per 100 000 live births, or by 40% (P<0.02). It can be concluded from the study that Avitaminosis is a cause of maternal morbidity and similar results were found in the present study also^[13]
- Iron deficiency anemia was the second most common cause of morbidity in expectant mothers, which was found 34.6% more common in third trimester especially in multipara. Brabin B.J *et.al* 2001 conducted a study

on analysis of anemia and pregnancy related maternal mortality and found relative risk of maternal mortality with severe anemia was 3.51 (95% CI: 2.05-6.00)^[14]

- 14% expectant mothers were suffered from pulmonary tuberculosis. Overcrowding, illiteracy, low socio economic status and malnutrition were found as major predisposing factors. Khan. M *et.al* 2001 conducted a prospective study to document the impact of tuberculosis and HIV-1 on maternal mortality and found that fourteen of the 15 mothers with tuberculosis were HIV-1 co-infected. The mortality rate for tuberculosis and HIV-1 co-infection was 121.7/1000; for tuberculosis without HIV-1 co-infection, 38.5/1000^[15].
- In this study, the prevalence of IUGR was found to be 9.5%. While as in study conducted by Muthayya, S. et al. 2006, it was found that the prevalence of IUGR in apparently healthy women was more (28.6%)^[17].
- In the present study 30.6% expectant mothers were found to be suffering from infective vaginitis and vulvitis which was comparable with studies done by Goto, A. et al. 2005^[16]. Intestinal Protozoal infection was found in 22.6% of the women in the present study which was comparable with study done by Lengerich, E. J. et al. 1993^[18].

CONCLUSION AND SUGGESTIONS

Hence it can be concluded that non utilization of maternal health services (due to illiteracy and unawareness) large family size, high parity, repeated pregnancies, beliefs associated with food intake during pregnancy, poverty, low socio economic status, poor environmental conditions and unhygienic practices play a vital role in the development of the morbidity status in expectant mothers.

Based on the present study it is suggested that some preventive measures are necessary for improvement of women's reproductive health which are as under

- Nutritional deficiencies can be controlled by balanced and adequate diet during pregnancy to meet the increased needs of mother and to prevent nutritional stress.
- The pregnancy diet ideally should be light, nutritious, easily digestible and rich in protein, minerals and vitamins.
- Protozoal infections are to be prevented by elementary sanitary practice of washing hands after defecation and before eating, provision of safe drinking water, food hygiene habits and health education in the use of sanitary latrines and changing behavioral patterns.
- Morbidity status could be minimized by adopting good hygienic practices, which include personal and environmental hygiene. The expectant mothers should be persuaded to attend antenatal clinics for systematic supervision (examination and advice) called ANC.
- The present strategy is to provide MCH services as an integrated package of essential health (Primary health care) which is base on the principles of equity, intersectoral coordination and community participation.

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