

CHAPTER II

ESSAY

Increasing antenatal coverage using Home-Based Prenatal Record through Traditional Birth Attendants in Nepal.

2.1. Introduction

More than 20 percent of the population in developing countries are women in their reproductive years. During a women's life, one of the greatest risk period to her health is during pregnancy and child birth. Pregnancy is a period of potential risk because it brings high risk of sickness, complications of delivery, disability and death. "At risk" pregnancy is pregnancy with preexisting factors that could increase the risk of complications during pregnancy or delivery for the mother or the infant (Mc Donagh, 1992). Normal pregnancy ends with the birth of alive baby to a healthy mother. A risk factor is one link in a chain of associations leading to an illness or an indicator. A basic core of risk factor relate to parity, age, height, and birth intervals and presence of diseases create the likelihood of women's death in child birth. Numbers of Maternal deaths are varied from region to region. Women in developed countries have an average life time risk of dying during pregnancy and childbirth of between 1 in 4000 to 10000 live births where as women in developing countries have a life time risk of 1 in 50 live births (Juneja, et al. 1994).

Globally WHO estimates that about 200 million women become pregnant each year and half a million die or suffer life long disability from causes related to pregnancy and child birth. (DHS, 1996). Ninety eight percent death occur in the third world and 80 to 90 percent of such deaths and illnesses are preventable by relatively simple means without any need for high technology or hospital facilities (Lumbiganon, 1988).

Maternal mortality is an important indicator to assess the health status of women. Because of difficulty associated with human birth, at least 15 percent of all pregnant women require skilled obstetric care without which they will suffer serious and long-term morbidity, disabilities and even death (WHO, 1994). Due to several factors such as nature of transportation, socio-economical, cultural factors and inadequate health care services in developing countries where general health care is not available to prevent or treat risk factors before conception, prenatal care become even more important.

Maternal mortality rate ranges from 25 to 1,660 in studies from developing countries, and average 10 in industrial and the highest overall ratio occurs in Africa (610); the ratio are lower in Asia (420); and in Latin America (270). Differences between urban and rural areas, are blurred by the regional statistics. The maternal mortality ratio measure the obstetric risk in a given pregnancy and an important indicator of women health quality of life. Therefore, the main issue here is how to improve antenatal services to reduce pregnancy complications among high-risk pregnancy in Nepal.

The ability of the health system to decrease the effect of pregnancy complications depends upon the capacity to identify high risk women, prevent complications or treat them, and refer for skilled obstetric care. When a complication present itself in spite of prenatal care, backup obstetrical, and referral facilities are required

Despite recent gains in a few countries, most women in developing countries face social constraints which limit their decision-making power and ability to safeguard their own health. Summarizing possible actions of maternal and child health program before and after conception are priorities for service include short term and long term or immediate program for risk reduction. Hence the ideal maternal and child health program include prenatal care, family planning service, training of Traditional Birth Attendant and health worker, regional referral and emergency transportation system with female enrollment in school and improve female nutrition would also contribute to better maternal and perinatal health. (Walash, et al, 1993)

In Nepal, according to population projection for Nepal 1991-2011 (Central Bureau of Statistics, Kathmandu, 1994), 4,961,836 women were of reproductive age among the 927,224 expected pregnancies of those at risk were found to be 40% or 370,890 total pregnancies. Early pregnancy loss found 92,722 (10%) and still birth was found to be of 25,035 (3% of total births) and expected live birth was 834,502. The national coverage of antenatal service is only 19%. This means that more than 80% of

women do not get any antenatal care from trained health workers during their pregnancy

Maternal mortality in Nepal is very high (539 out of 100,000) in comparison to other developing countries of Asia like Hongkong, Thailand, Malaysia with MMR of 4, 7, and 11 respectively. Most of the deaths are resulted from the obstetrical complication and chronic disability these complications are aggravated by a number of socio-cultural and low economic factors, such as poor nutrition, illiteracy, poor living conditions, overworked, low body mass index prior to pregnancy, traditional harmful practices, conditions needing referral are poor weight gain during pregnancy, first pregnancy, age younger than twenty or older than thirtyfour, poor outcome of previous pregnancies, infection and illness during pregnancy and delivery.

Along with these, there are several factors related to health infrastructure of the country revealing inadequate access of maternal health care and family planning services to women of reproductive age. There are several constraints to achieve safe motherhood in Nepal such as poor health coverage due to difficult terrain, lack of adequate communication facilities, lack of female health care staffs, nonexistence of trainings, technology and guidance for provision of maternity care, lack of awareness on maternal health issue and nonintegrated information system in reporting and feedback. (Safe motherhood Plan of Action, 1994)

One of the reason for under-utilization of health services is low coverage. According to Country Health Resources Priorities, 1989, there is 1 hospital for

186,000 population, 1 doctor for 92000 population in rural area. Similarly there is 1 health post for average 24,000 population resulting in poor health coverage availability in Nepal

William & others stated that rural women are much less likely to receive prenatal care than urban women. In places where walking distance is short, more use has been made of clinics. The best result have been when women are within three kilometers of a clinic. In Nepal, the average distance a person must travel from their house to a health facility are in the mountains is 8-17 kilometers, in the hills is 2-11 kilometers and in the terai is 6-9 kilometers. It shows that distance effects for utilization of health services (Country Health Resources and Priorities, 1989).

Women do not attend the clinic due to several reasons. Cultural barriers to service include distrust and reluctance to meet male health workers, some women consider hospitals or clinics as places to die and so they refuse to use the service for preventive or routine health care. They will only go there for prenatal care if they develop complications. Considering the factors for under-utilization of antenatal service, community based program seemed more appropriate to provide through female community health workers.

The health service solution will be inadequate without concurrent attention to the other areas mentioned as socio-economical, cultural factors and present health infrastructure. Although prevention of risk factors is relatively difficult due to lengthy

list of causes of disease and social conditions associated with problems makes this evident. Obviously, no single, highly effective control measure, such as vaccine, drug, or vector control methods exist. Attention to women's general health care needs and readily available prenatal and obstetric care, however, can prevent the preponderance of maternal and perinatal mortality and morbidity (Walash et al. 1993).

Many other developing countries like Sri Lanka and China have made remarkable progress in reducing maternal mortality. Lesson learnt from their experiences provide clues to possible effective action to take. In Sri Lanka, maternal mortality ratio dropped from 555/100000 in 1950 to 95 in 1980 with the provision through universal education raised the average age at marriage and increases the use of family planning. Similarly, China lowered maternal mortality by substantially lowering birth rates, raising the age at marriage and improving health care for pregnant woman.

One of a major component of maternal and child health programs is the antenatal service which mainly contain health promotion, risk detection, treatment and management, iron folic acid supplements, malaria prophylactics in endemic areas and nutrition education. Therefore, establishment of a community outreach program is essential to provide antenatal services including nutrition advice, identification and referral of high risk pregnancy and encourage mothers to use health facilities. For that Lettenmeier, (1988) and others suggested that as many women prefer TBA even when health care facilities are available, health workers need to work with TBA to increase the number of women obtaining prenatal care with appropriate training and supportive supervision. TBA can provide the basic care required by woman during pregnancy. In

addition, she must recognize risk symptoms, warning signs and should know how to stabilize a woman's condition, and transfer her to the next level of care.

One of the findings of the study was that on a first visit to an antenatal clinic an obstetric history is obtained, seeking risk factors that might affect the outcome of pregnancy. Benefit can be obtained by risk factors detection associated with obstructed labor (WHO, 1998b). Therefore, utilization of antenatal service has a great significance in preventing obstetrical complications by detection and management of any "at risk" conditions during pregnancy.

Routine weighing is another antenatal procedure. By this, 10.5 to 13.0 kilograms is the recommended weight gain for a woman in developed countries but this reduces to 5 to 9 kilograms for developing countries. There is the general agreement in the literature that the most important factor for mother and child is the mother's pre-pregnancy weight (Mc Donagh, 1996). Identification of woman of low body weight will only be beneficial if means are available to correct the situation.

Mc Donagh (1996) stated that the objective of routine measurement of blood pressure during antenatal period is to screen for high blood pressure which is an early detectable sign of toxemia. One study in developing countries found 5.4 to 33.2 percent of women presenting with a diastolic blood pressure over 90 mm of Hg during pregnancy and mortality ranges from 7 percent to 25 percent. As 80 percent of high blood pressure cases occurred after 32 weeks gestation. Therefore, routine blood

pressure reading is carried out in conjunction with examination for the presence or absence of edema and proteinuria. For this, sedation can be prescribed successfully in a health center to prevent from eclampsia.

Together with blood pressure, abdominal examination is to predict and efficiently detect those conditions that may adversely effect health of pregnant woman, child and guide the subsequent management. Abdominal examination in most developed and developing countries are conducted by measuring fundal height, listening to fetal heart sound and manually palpating to feel the position of fetus and well being . The eventual outcome is depending on the availability of efficient obstetric facilities as cesarean section if malposition is present. In developing countries in comparison to developed countries can not afford ultrasound to detect fetal position and well-being. It is suggested that simple and appropriate technology should be encouraged especially when cost effectiveness of sophisticated high technology equipment can not be proven and the truth is that in developing country above procedure can easily be carried out by TBA with some support of training, supervision and some procedure has to be done in the health center by trained health worker only if pregnant women is referred to the center.

In developing countries, it is estimated that two-third of women are suffering from anemia and that often underlying the cause of maternal mortality. therefore, distribution of iron and folic acid will improve the nutritional status of and will also enable them to withstand hemorrhage and prolonged labor and improve anemia.

Therefore, when talking about the potential role of antenatal care, a vital contribution could be made if attendance at an antenatal service influenced women to select a trained birth attendant, this would help reduce death from delayed referral, sepsis, obstructed labor, and morbidity associated with prolonged labor and poor delivery technique (Greenwood et al, 1990). Thus, this analysis proved that in developing countries, antenatal care has vital role to reduce numbers and severity of obstetrical complication in more achievable ways through the community based programs.

Demography Health Survey, Annual report of 1995/1996, and according to Ministry of Health policy, all health facilities should attempt to provide antenatal services in order to promote the health of the pregnant woman. Activities encompassed under the family health service program. Including safe motherhood program in Nepal, a national plan of action, 1994 to 1997 recommended to include following important services regarding antenatal care:

- a. Physical examination and laboratory services (when possible) to monitor fetal growth and detect risk factors of pregnancy (Age, parity, height, anemia and other predisposing factors).
- b. Health education and counselling on nutrition, exclusive breast feeding for four months, family planning and reproductive health at all levels.
- c. Provision of tetanus toxoid immunization, iron tablet distribution, malaria prophylactics where necessary, health education and referral for basic natal care through FCHV and TBAS at the community level.

Analysing the situation of maternal health problem related with “at risk” pregnancies, increasing antenatal coverage is one of the appropriate alternative to reduce obstetrical complications and deaths of women in Nepal.

2.2. HIGH RISK PREGNANCY

2.2.1. Incidences of maternal deaths.

Maternal mortality is usually defined as death occurring while the women is pregnant or within forty-two days of termination of pregnancy. Dictionary meaning of complication is “complication is something that makes a situation, process more complicated making treatment more difficult” (Longman, 1991) or "A secondary disease or conditions that develops in the course of a primary disease or condition and arise either as a result of it or form of independent cause" Merriam Webster, 1986. Half a million women die each year from the complications of pregnancy and child birth in developing countries. These complications are fatal. The cause of deaths are almost the same among developing countries.

Table 2.1 below shows the global incident of maternal mortality caused by obstetric complications worldwide in 1993. The main obstetrical complications are hemorrhage, sepsis, hypertensive disorders, eclampsia, obstructed labor, unsafe abortion, direct and indirect causes, and unsafe abortion. Looking at the percentage of the women’s deaths, hemorrhage is the major cause for the deaths of women where as sepsis stood on the second highest cause and sepsis is in the third rank. Rest of the

Table 2.1 Estimated global incidence and mortality from the main obstetric complications worldwide (1993).

Obstetric complication	Incidence %	Number of cases (000 s)	Number of deaths (000s)	% of all maternal deaths
Hemorrhage	10	14000	127	25
Sepsis	8	12000	76	15
Hypertensive disorders	4.5	6400	22	4
Eclampsia	0.5	700	43	8
Obstructed labor	5	7000	38	8
Unsafe abortion	*	20000	67	8
Other direct causes	3	4000	39	8
Indirect causes	9	13500	100	20
Total		* * 7600	510	100

* Estimate to be equivalent to 10% of all pregnancies.

** estimated number of events, not women.

Source: WHO, Maternal health and safe motherhood program, unpublished estimates.

aggravated by pregnancy such as malaria, anemia, TB, hepatitis and heart disease. The majority of women survive such complications, they may nonetheless suffer acute or chronic ill health and debilitating conditions such as anemia or reproductive tract

infections, and life-long disability such as obstetric fistula, which may render them from their own families (WHO, 1994).

Looking at the incident of complication cases, unsafe abortions are in the top rank i.e. estimated to be equivalent to 10% of all pregnancies, which found to be 20,000,000, the incidence of hemorrhage are of 10% i.e. 14,000,000 cases and is the second highest incidence. Incidence of indirect cases is 13,500,000 i.e. 9%, incidence of sepsis is of 8% and cases are found to be 12,000,000 i.e. in the third rank. The incidence of obstructed labor, hypertensive disorders. Other direct causes and eclampsia are of 70,000,00 (5%), 64,000,00 (4.5%), 40,000,00 (3%) respectively.

Although the incidence of abortion found to be in the highest among the rest of the cases; it is found that the majority of women died due to the hemorrhage. The reason for that is because the condition of hemorrhage is the most fatal one and acute than abortion. We can view on the incidence of deaths resulted from indirect causes which are in the second rank and much more serious than the incidence of sepsis and other cases because, the underlying these medical causes of deaths are the social and cultural factors implicated in maternal mortality and morbidity. Maternal death is only the last chapter in a story that start much earlier in women's life. In most part of the world, girls are subject to discrimination in terms of allocation of family resources and access to health care. It also indicates that girls and women receive inadequate treatment by culturally they eat last and least, overworked, under-educated, have to give many births from early age. Therefore, inter- relationship between women's low

status and their access to health care is quite complex issue and another barrier to use of health care services is the failure of health system to take their need into account. However, the immediate cause of maternal deaths is the absence, inadequacy or under-utilization of health care system. Therefore, from the public health point of view, it is necessary to identify which interventions can address the problem in the short term and which will require more in long-term investment and multi-sectoral approach. Health care including antenatal care have immediate impact on health of pregnant women specially to deal with high-risk pregnancy in order to prevent incidences of such complications and deaths (Safe motherhood, mother and baby package, 1994).

Nepal also have similar figure as hemorrhage and sepsis which are the main top two causes of death of the women. Causes from other conditions are difficult to be estimated in Nepal, since few studies has been carried out to estimate cause of maternal deaths. A longitudinal study in Jumla, Nepal estimated the MMR to be 1600/100000 live birth (Jumla project, 1989/JSI). District based study in Kavre, Nepal estimated the MMR to be 1217/100000 live births. Both studies reported that the main cause of deaths were hemorrhage and sepsis toxemia and obstructed labor. The official figure shows MMR to be 539/ 100000 live births (DHS, 1996) but according to a draft report 1992, a community-based survey of maternal mortality conducted in Surkhet, mid western, Nepal by Health Development project reveal a MMR of at least 50 percent higher than the officially accepted average rate (FHD, 1993).

The study which was carried out in Kavre District, Nepal from 1981-1991 to find out the cause of maternal deaths in 10 years period of time.

Table 2.2 Causes of maternal deaths by age group within 10 years time(1981-1991).

Age group	Excessive bleeding	Hemorrhage	Toxemia, Obstructed labor	Total	Percentage
15-25 years	19	8	8	35	50.00%
26-35 years	12	8	11	31	44.29%
36-45 years	x	1	3	4	5.71%
Total	31	17	22	70	100%

(Source: Study Report on Maternal Mortality in Kavre District, Nepal, Journal of Institute of Medicine, 1991)

Data of table 2.2. shown above the causes of maternal deaths by age group. Out of 70 deaths, 31 women died of severe bleeding (Hemorrhage) 17 died due to high-grade fever (Sepsis), the others died probably due to preeclampsia and obstructed labor. The highest numbers i.e. 50.00% deaths was found to be in female of 15-25 years of age group indicating that early marriage and child births put the women into the at risk conditions which tends to have complications and deaths.

2.2.2 Risk factors:

Most of the deaths occur because of failure to recognize the seriousness of problems and to make use of available services in good time, together with poor health

Table 2.3. Assessment of risk factors for maternal mortality, low birth weight, and peri-natal mortality. A woman is in “at risk” if one or more risk factor found:

Risk factors	Maternal mortality/morbidity	Low birth weight	Peri-natal mortality	Preventive & treatment measure available
Pregnancy- Demographic:				
1. Age <20 or >30 years (a)	Yes	Yes	Yes	No
2. Low socio-economic status (a,b)	Yes	Yes	Yes	No
3. Low education level (b)	No	No	Yes	No
4. Unwanted pregnancy (a)	Yes	Yes	Yes	Yes
Medical risk factor:				
1. Number of children, none or > 4	Yes	Yes	Yes	Yes
2. Low maternal weight for height, and poor nutrition	Yes	No	Yes	Yes
3. Diseases as chronic hypertention, diabetes (a)	Yes	Yes	Yes	No
4. Poor obstetric history (a,c)				
Pregnancy- medical factor:				
5. Multiple pregnancy (a)	No	Yes	Yes	No
6. Poor weight gain (Maternal and fetal) (a)	Yes	Yes	Yes	Yes
7. Anemia, Malaria, STD (a)	Yes	Yes	Yes	Yes
8. Short inter-pregnancy interval	Unknown	Yes	Yes	Yes
Hypertention, pre-eclampsia, toxemia (a)	Yes	Yes	Yes	Yes
Inadequate health care services (a) and (c)	Yes	Yes	Yes	Yes

Key words: (a) High relative risk or very common, (b) Closely associates factors with increased risk, (c) Prenatal care appears to decrease maternal and infant disease. Those women who voluntarily choose prenatal care usually healthier and have fewer risk

Source: Walash et al, 1993.

infrastructure. In addition, most of the deaths occur in ' at risk ' cases, in which one or more of the conditions and characteristics considered to be risk factors are present. Fortunately, most risk factors can be dealt with , provided that they are diagnosed and managed in time (WHO,1994).

There are number of aggravating factors related with social, biological, and cultural aspect which put women exposing to risk together with added risk by presence of other diseases such as TB, malaria, sexually transmitted disease and heart disease. By analysing the various factors relating to adverse effect on mother and child, feasibility of preventive measures, prenatal intervention is recommended depending upon local problem and resources. The actual health effect of an intervention, however, depends upon several factors as rates of effectiveness, or treat the problem; accuracy of the diagnostic test to identify those who would benefit from the intervention; quality of care; patient compliance; coverage i.e. proportion of women using the service and frequency of health problem. All those factors plus cost and feasibility should be considered by asking countries to plan a system for improving maternal and perinatal health

2.2.3. Complications:

Risk assessment during antenatal care, however, is not by itself sufficient to identify all women who will develop complication during pregnancy, labor, and delivery. One reason for this in many countries may be related to poor quality of care, including the skill, attitudes, and motivation of health workers. Another limitation is

that complications also occur in women who are not identified as high risk. Since obstetric complications are often unforeseeable, every effort should be made to provide essential services that are available , acceptable, and accessible to all childbearing women..

Table 2.4. Complications affecting on health of the mother and fetus/ baby

Problem or complications	Most serious effects on Mother's health	Most serious effects on fetus and new born baby
Severe anemia Low birth	Cardiac failure, infection	Low birth weight, Asphyxia, still birth
Hemorrhage	Shock, cardiac failure, infection	Asphyxia, still birth
Hypertensive disorder of pregnancy	Eclampsia, cerebro-vascular accidents	Low birth weight, Asphyxia, Still birth
Infection during pregnancy STD,	Premature unset of labor, ectopic pregnancy, Pelvic inflammatory disease, infertility	Premature delivery, Neonatal eye infection, blindness, pneumonia, still birth, Congenital syphilis
Hepatitis	Postpartum, hemorrhage	Hepatitis
Malaria	Severe anemia, cerebral thrombosis	Prematurity, intra-uterine growth retardation

Source: Safe motherhood, mother baby package, 1994.

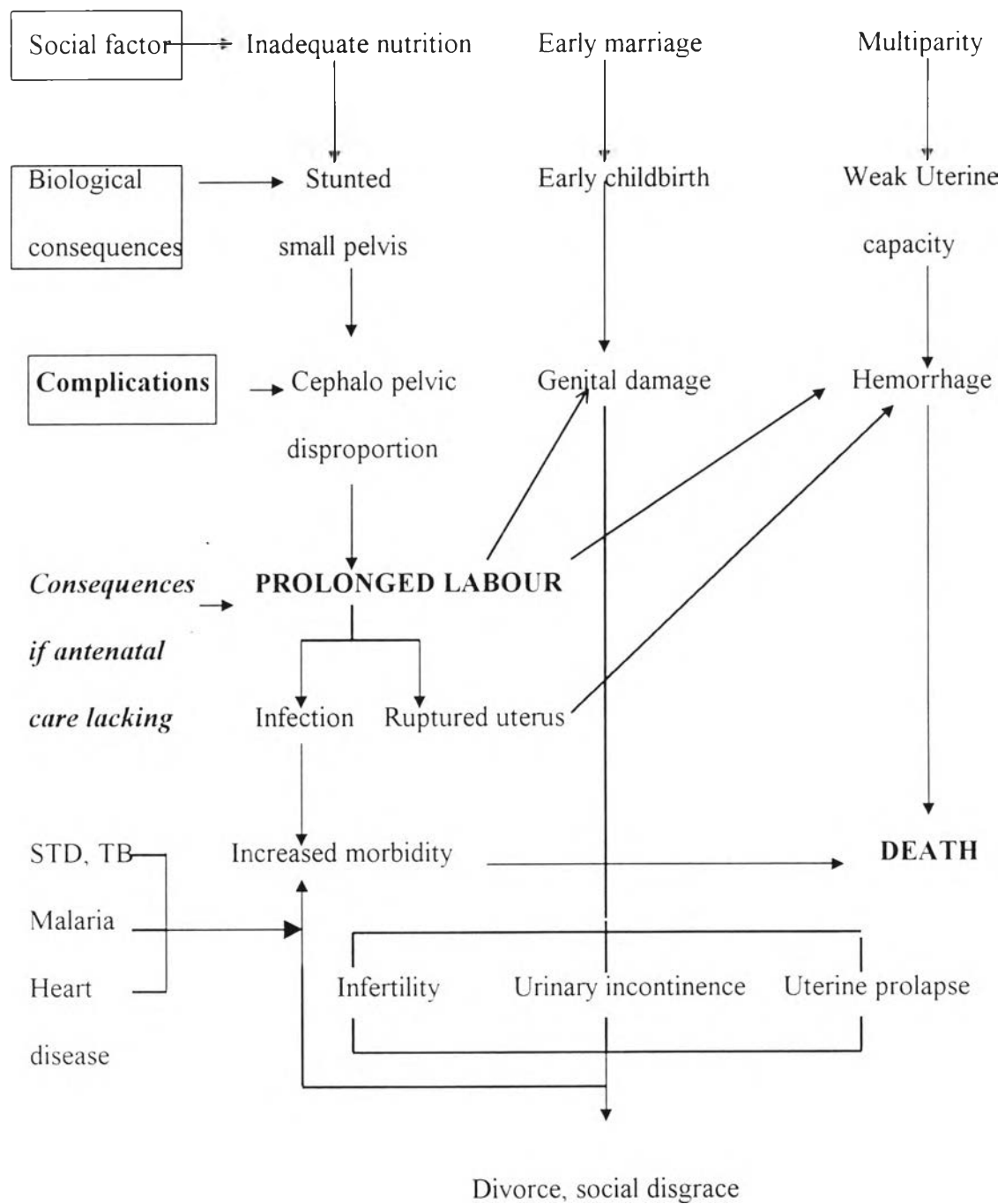
Table 2.4. illustrates an adverse effects of complication on life of mother and fetus. Most of the complications have maternal and infant mortality. Most of the maternal deaths are caused by severe anemia, hemorrhage, hypertensive disorder, obstructed labor, infection, and diseases like hepatitis, malaria and STD, these complications may cause cardiac failure, severity of disease like eclampsia from preeclampsia, severe anemia, hemorrhage, infection and ultimately the death or life long morbidity like reproductive and gynae problem i.e. fistulae, and uterine prolapse and so on.

Most of the newborn deaths are due to infections that occur either at birth (neonatal tetanus and sepsis) or shortly after birth (pneumonia, diarrhea). Almost the third on its own causes some 10 percent of newborn deaths however, because premature newborns are much more susceptible to asphyxia and infection, their deaths are often classified under other categories. Many infants survive with lifelong disabilities. An unknown proportion of newborn deaths resulted from neglect of the female newborn infant. As prevention is better than cure, and antenatal service prevent not only the complications but saves life of the mother and infant.

2.2.4 Consequences:

Major complications of pregnancy are caused by prolonged or obstructed labor. The underlying causes for this are social and cultural factors .Thus the relationship between the cause and consequences are quite complex.

Figure 2.1 Major causes and consequences of pregnancy complications



Source: Lettenmeier & others, 1988.

Table 2.1 shows the casual relationship between cause and consequences of obstetrical complication. It depict how social factor like inadequate nutrition bring biological consequences like stunted, small pelvis leading to have cephalopelvic disproportion resulting adverse obstetrical complication as prolonged labor. In this stage if woman lacks proper antenatal care, she may get infection and ruptured uterus. In addition, if other medical problems like STD, TB, Malaria, and heart disease is presented it will make the condition worse in increasing the morbidity which ultimately leads death. In the other hand prolonged labor may complicate with genital damage resulting to infertility, urinary incontinence and uterine prolapse, from these women could get divorce and facing such social disgrace. At the same time, prolonged labor also cause ruptured uterus and both of these result in hemorrhage which is the major cause of the death in developing countries.

Another evident of social factor is early marriage, hence genital damage is caused by early child birth which may bring gynae problem like infertility, urinary incontinence and uterine prolapse. With this, she will suffer from social disgrace and divorce problems. Reproductive morbidity ultimately lead deaths. Thus, this figure clearly illustrated that the cutoff point for avoiding the adverse effect like prolonged and obstructed labor is definitely the provision of antenatal care. Because the service will help to detect risk which make it easier to treat, this will help to manage and refer the case to the health facility as needed. Therefore, detection from the community level is very important and which is only possible by increase of the antenatal service.

coverage accessing by traditional birth attendance with providence of appropriate training by means to provide effective antenatal care to those women whom in need.

2.3. ANALYTICAL FRAMEWORK:

The model presented here has been developed which is based on the conceptual model of Brandley and Martin (1994). The model concept, on two major aspect has been drawn out which include the variables related to demographic characteristics with consisted of socio-cultural , economical and biological factors. Type of health services and its infrastructures are influencing use of antenatal care services interrelating with patient's behavior to the direction of using antenatal care service as to reduce risk for better outcome of pregnancy and lastly reduce mortality and morbidity. Therefore, this model will help to specify the significant of demographic characteristics for use and none use of antenatal care services.

Demographic characteristics include major aspect of socio-economic, cultural and bio-physical comprising main components as income, education, norms attitudes, practices, parity, age at marriage , health status and diseases affecting directly or indirectly on the health of pregnant women and birth outcome. Several studies have been carried out regarding the use of health service utilization (Niraula, B. B., 1994; Stout, 1997; Pearce et al, 1996). Findings show that the socio-economic, cultural and health infrastructure are the significant variables which are positively related to use and non use of the antenatal care service.

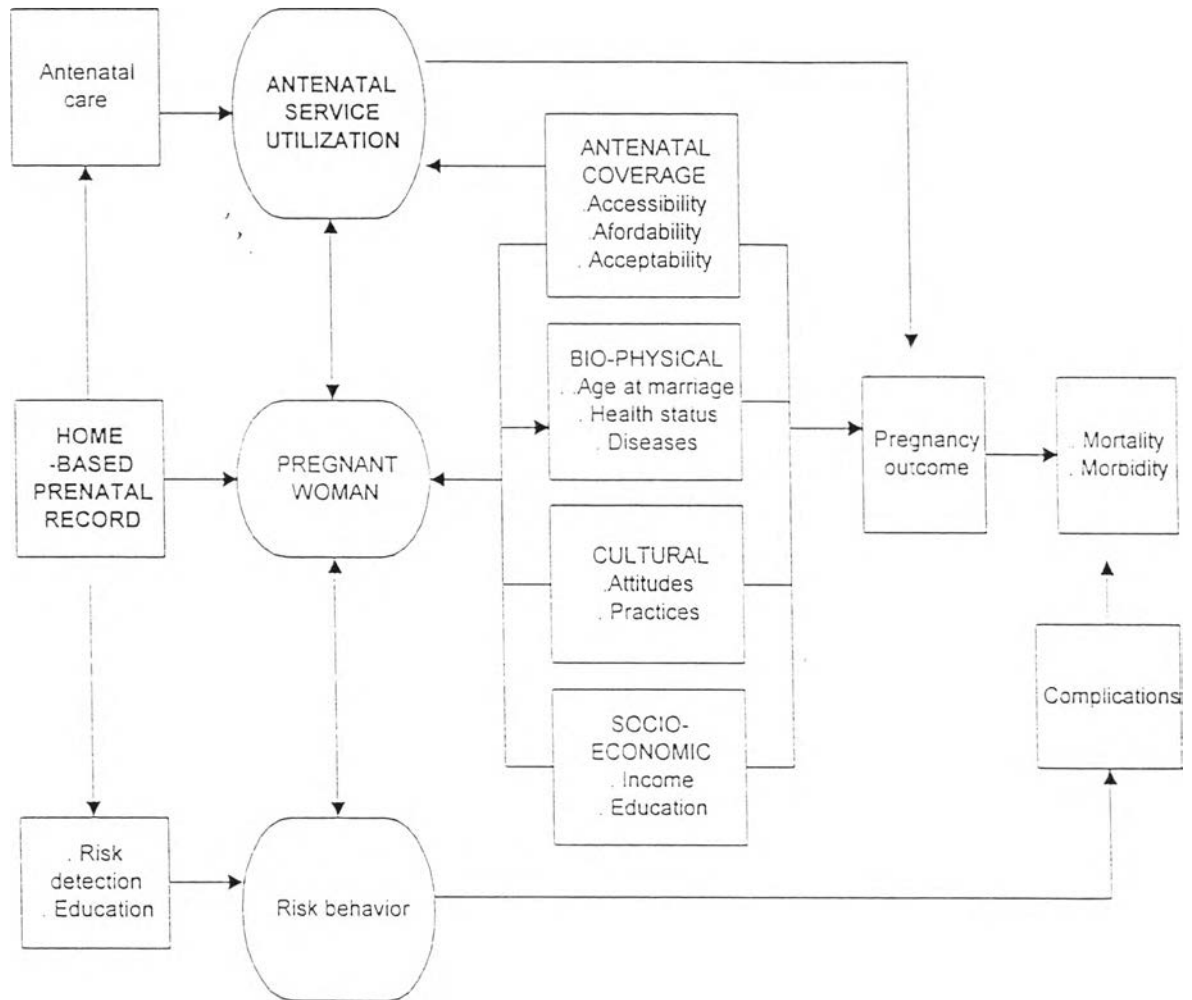
2.3.1. Socio-economical impact:

Education and income play crucial role for use of antenatal care service with the women with low income are among those at risk of both mother and child's health. These women tend to use prenatal care less often, perceive more barrier to care have less positive reinforcement for receiving care, have less access to care, have less education levels, maintain less lifestyles and lower compliance with recommendation (Hendersion, 1994; Koska, 1990; Lia-Hoagberg et. al.) As Nepal is one of the poorest countries in the world having per capita income estimated at only \$ 180, female literacy rate is only 25 percent and a large majority of people continue to live in poverty, depending on agriculture, low income having less food available. Woman is the one who suffers the most and does not have any access to facilities. Women with low income and lack of education tend to have more children having risk behavior in child bearing practice and abortion related action. As education increase knowledge, value and practice which is found to be a significant predictor of the use of antenatal care service therefore pregnancy related complications are more common in low socio-economic and uneducated group of women.

2.3.2 Cultural influences:

Cultural factors, attitudes and practices play major part for use of antenatal care services. Traditionally antenatal care has not been practiced by Nepalese women due to cultural modesty and not usual to discuss if any pregnancy related complication arises. Thus, complications become more severe to put the women in more risk (HMG / UNICEF, 1992). As most in rural community of Nepal household rules are

Figure 2.2. Analytical framework of casual relationship of antenatal service utilization and risk reduction:



Source: Brandy and Martin, (1994). "The impact of home visits on enrollment pattern in pregnancy-related services among low-income women". Public Health Nursing. pp. 392-398.

predominant by mother in laws. Women who are aged 35 years and above are traditional and want to keep to traditional modes of treatment, from local healers; they also tends to distrust modern medicine. Hence it hinders utilizing the antenatal care service (Niraula. B. B, 1994).

2.3.3. Bio- physical factor:

Pregnancy itself can develop complications and some of the bio-physical factors add up more risk in to it. Bio- physical factors are the socio-economical and cultural factors implicated in maternal mortality and morbidity. In Nepal, early marriage is common than the legal age of marriage. The mean age of marriage found to be 17.1 years for young women and adolescent pregnancy is about 16 to 20 percent. According to 1986 estimation, 40 percent Nepalese women deliver at the age between 15 and 19 while years between 20 and 30 are the safest period for women life for child bearing (UNICEF, 1991). as the bodies are still physiologically and anatomically immature. Therefore, the incident of complications like severe anemia, hypertensive disorders, premature delivery, and fetal loss are more prevalent among them. Young women who become pregnant soon after menarche had stillbirth rates of 1.6 times higher, miscarriage rates 1.1 times higher and infant mortality rates 1.8 times higher than women who become pregnant at later age (NPC/HMG/UNICEF, 1992). Not only that because early marriage faces continue pregnancy and childbirth with the consequent hazards of multiparity, the average number of children that a woman gives birth to has been estimated at about 6. The reason behind this are various but the utilization of family planning service is very low at only 29 percent (NFHS, 1996).

Therefore, family planning has an extremely important role in reducing number of high risk pregnancy and message can be conveyed through prenatal education with provision of family planning service as well (Juneja et al., 1994).

In addition to the above condition, diseases like tuberculosis, malaria, sexually transmitted disease which are highly prevalent in developing countries, become more active during pregnancy exposing more risk to mother and fetus. These diseases can be managed with proper treatment and providing prophylactics as for malaria and anemia during pregnancy.

Health status of women in most developing countries is low. The beginning of which may be traced to deprivation in girlhood. They are subject to discrimination and take second place to those of men. The work burden for women is higher than that of men. Other reason is on inadequate intake of iron contains diet due to cultural and economic state. Several studies show that anemic pregnant are about 3 times more likely to result in a mortality and increase risk of complications during pregnancy which implies a high risk of stillbirth, prematurity and low birth weight. The above factors make women stand in low health status to cope with problem related to pregnancy complication. Health care for women is both the outcome for their health productivity and ultimately of their status.

2.3.4. Health service characteristics:

Availability, affordability, acceptability or gender factors related to health care service also effect use and non use of antenatal care services. Women in developing countries receive inadequate or no prenatal care because of structural barriers, time, cost, organization of services, lack of transportation, financial access which block these women for obtaining antenatal care (Stout, 1997). Because people expect treatment at door step and expect early treatment and cure from medicine; getting health care service is time consuming and expensive. Often, it takes hours to walk to health care facility, absent of health care provider at the center, have to wait a long time and receiving low quality care and treatment with deprived of essential supplies, little communication between the provider and pregnant women. All of the above factors discourage pregnant women in seeking antenatal care. In the other hand, most of the health post lacks female staffs. Culturally in most of the society in Nepal where pregnancy and child birth and body organs are not subjects the for inhibited public discussion, male health worker limits in providing information to women regarding high risk pregnancy . Therefore presence of skilled female health provider in the community is desired to promote the information in risk behavior among pregnant (Niraula, B. B., 1994).

2.4. REDUCTION OF RISK

Although risk reduction prior to conception is the most feasible way to improve the maternal health Walsh, et al. suggest that pregnancy would have to be eliminated

to completely eradicate reproductive risk. Considering value of family and society at least avoidance of unwanted pregnancies lowering the risk during pregnancy are desirable and many steps to be taken even before conception as better general health for women through integrated set of action including health services, community development, education for female children. Writer again suggested that improvement in nutritional status by nutrition, food supplementation, iron folic supplement, health education, anemia screening, iodine supply and promotion of community and household gender and income supplement. The choice of intervention depends on the most important nutritional deficiencies experienced in an area and availability of resource. Intervention needed to woman so that she enters childbearing age with normal height weight , pelvis size and nutritional status. World Bank 1993 also insist that the only reliable method of improving nutritional status is by improving socio-economic condition in the country and by advocating female education.

Condition like cardiovascular disease is caused by rheumatic fever may complicate childbirth. Study in Manoufia, Egypt shows 16 percent maternal deaths were due to this condition.; one half of them involved a history of rheumatic fever (Fortney and others 1988). Genito-urinary tract infection also can cause infertility, ectopic pregnancy and hemorrhage later on. Therefore, childhood disease and diagnosis of infection of reproductive tract and sexually transmitted diseases also must be taken into account to avoid risk during pregnancy, also disease associated with pregnancy should be treated when dealing during antenatal care.

Until the woman is fully grown, the delay of reproduction is also very important. Advocacy, health education plays an important role to make community aware of avoiding adolescent pregnancy. The status of women in society directly affects their health. Education is an important means to improve the status by motivating to attend their own health need. Education also tends to make woman when ready marry and use antenatal and obstetric service to avoid harmful traditional practice. Maternal education also effects infant mortality; together with this, economic and social development also make it easier for people to obtain the resources required for good health and maintain hygienic condition to safeguard it. Careful attention to development policy choices can increase the probability that woman will have lighter workloads and better food, both of which are extremely important in reducing the wear and tear on health which is most felt during pregnancy and childbirth.

Family planning acts on maternal health through several mechanisms as there will be fewer unwanted pregnancies, fewer women resort to illicit abortion, birth intervals which improve infant health fewer grand-multiparas, and most importantly, reduce number of pregnancies in women most in risk of pregnancy complications. Family planning includes education and access to contraceptive methods and availability of safe abortion services to backup other contraceptive services is highly effective and low- cost way to reduce maternal mortality (Blacker, 1987). When summarizing the ideas from the different writers regarding the risk reduction prior to, during, and after the pregnancy, an integrated approach seemed desirable and ideal to improve the health of the women. But there are several factors to be improved in

developing countries related to its socio-economic, cultural, geographical, and health infrastructure in order to access maternal health services for the women in rural communities. Where, basic maternal health services are still lacking, priority has to be given in the areas of service coverage as a short-term program. In addition, family planning and other health services need to go side by side to improve the health of the women.

2.5. IMPROVING SERVICE COVERAGE

2.5.1. Antenatal coverage

Several writers have given their views and ideas about the importance and rationale to increase antenatal coverage Ernest Uressa et al, 1997 states that the importance of community education on danger signs in pregnancy and labor is important, provision of core resource and supplies for emergency obstetric intervention as well as clear protocols for emergency for management and referral are absolutely necessary for improvement of maternal survival. Thaddes and Maine (1993) described three essential steps that must be taken when pregnant women develop a complication. First, the women and her family must decide to seek medical help; second, she must be able to reach the health facility ; and third, she must get the necessary care in the health facility. Here in this model, it has been tried to emphasize that ante-natal care is the first gate to inter for achieving rest of the activities that are essential to be stepped in the process of managing high risk pregnancy. And it is only possible through the primary health care approach using community based program by community based

health workers as to increase the antenatal care coverage in the country so that incidence obstetrical complications can be reduced.

Walash, J. A. insisted that general accepted strategy for dealing with the complications of pregnancy and childbirth involves prenatal care and use of facilities at the first- referral level, usually a district hospital for the management of high risk cases and treatment of obstetrical emergencies, due to the nature of transportation in the developing world, maternal health program must address need for emergency transfer. In some cases, maternity waiting homes for those with expected complications are proposed; in other innovation methods for providing transportation involved. Herz and Measham and Sibley et al, 1987 also advocate stronger community based prenatal care with stronger referral facilities and emergency transport system. Yet these two important strategies relating to referral network and transportation are clearly not sufficient. In themselves which is indicated by that fact that parturient women continue to die both at home or in the process of being transported to facilities.

Sibley et al. describes an innovative community-oriented strategy that has been designed to reduce maternal mortality and that targets women, families, and traditional birth attendant using two complimentary training interventions. The strategy reflects training of professional and paraprofessional health workers in emergency care is essential, but that it must be complemented by the education, mobilization of families, communities and TBAs, who must, in turn come to common perceptions on the need for and means of intervening to prevent the maternal death.

2.5.2. Needs of antenatal services

it has been recognized that antenatal care is vital for maternal and child survival. Antenatal care is an umbrella term used to describe the medical procedure and care that are carried out during pregnancy. The overall aim of which is to produce a healthy mother and baby at the end of pregnancy and ultimate objective is to improve maternal mortality and morbidity in developing countries (Mc Donagh, 1996). Secondly the objective refers to screen populations of pregnant woman regularly during pregnancy i.e. associated with women's medical, obstetrical and social history or circumstances and those arising during the antenatal period.

Many studies have been carried out to see the effectiveness of antenatal care procedure (Llewellyn-Jones, 1990; Hart et al., 1990; Durnin et al., 1988; Royston & Armstrong, 1989; WHO, 1992a; Rooney, 1992; Kwast, 1992 & Tew, 1990). Analysis of the studies on each antenatal procedure and reports of some of the positive impact of service has been made and said to be cost effective having intervention with health care service which has an immediate impact on the health of mother and child. It also reduces the number of women requiring skilled obstetrical care by identifying and treating women at risk of complications and referring them to other facilities if necessary. In the same time, it can also substantially reduce the proportion of low birth weight infant and incidence of perinatal diseases. The reduction depends however, on identifying high risk women early in pregnancy and providing them with special care. A study in Indonesia found that women who received no prenatal care were more than

five times as likely to die than those attended a prenatal clinic (WHO, 1994; Walsh, J.A., 1993)

2.5.3 Effectiveness of services

Effectiveness of antenatal service can be evaluated together with its major drawbacks program feasibility. Summarizing the contents on MCH service for management of pregnancy with antenatal intervention include antenatal care which comprise risk detection, blood pressure, checking for anemia, swelling, urine albumin, presentation of fetus and bleeding. The effectiveness of this is very high as it will reduce the risk for both mother and child. The major drawback is although screening criteria which is very difficult to select, health workers may lack training and women may underutilize the service. The program feasibility has high cost but is feasible if there are central referral hospital and specific training to health worker and community involvement is present, so that antenatal service is utilized.

Prenatal education on warning signs, nutrition and health habits although will be difficult to assess in terms of its effectiveness but nutrition education found success in avoiding toxemia. Its major drawback is lack of motivation of health workers and women plus busy hours in the clinic. Program feasibility with low cost is possible as mothers can be educated with nutrition teaching in the home through the TBAs.

Another intervention in antenatal service is the treatment of anemia hypertension, infection, STD, concurrent disease have highly effectiveness if can be detected and treated early. Without this level of service, women will die. Since high cost of diagnosis, medication and training and availability of service are questionable, by looking at program feasibility, service can be provided at primary level if possible and other serious cases at referral level.

Tetanus toxoid immunization eliminates most deaths from neonatal tetanus and immunized women but for effective use it required dose in correct intervals needs to maintain cold chain, needs specific training to health workers. It is feasible with low cost. Wider coverage is possible if women could be immunized at all level of health institution.

Anti-malaria education and prophylactics to endemic areas is highly effective if taken regularly and it also reduces low birth weight and anemia but it might have complicate the problem. It is feasible with low cost and assurance to women and it will have low side effects. Iron folic supplementation before and during pregnancy is highly effective if tablets is taken regularly but it may have some side effect and compliance problem with that difficult to motivate women to take regularly. It is feasible with low cost with teaching to women.

Referral and mothers waiting at homes will reduce hospital maternal mortality. With this, transportation problem will come. Feasible with low cost

will required good co-ordination between community program and hospital. Transportation to hospital for obstetric emergencies; this intervention have major effect in reducing many deaths from complications, however geographical constraints with inadequate roads, expensive fuel and means of transportation make it hard to access the service and it is also costly. Innovative communication and transport system is possible when roads are not available.

Training to TBAs on antenatal care, risk detection recommended for most of the developing countries, needs special skill, supervision, and refresher course have moderate cost, done in many countries, found most effective if community and formally trained health care providers are involved (Lettinmeier and others, 1998).

2.6 PLANNED STRATEGIES TO INCREASE ANTENATAL SERVICE COVERAGE

Main focus here is to increase antenatal care coverage which comprise all four aspects such as providing antenatal service including routine examination, detection of high risk pregnancy, prenatal education, tetanus toxoid immunization, malaria and anemia prophylactics including reproductive health care service i.e. treating medical diseases and STD which can be provided in well equipped hospital only. Coverage is so minimal that majority of women in developing countries are inaccess to these

facilities, Nepal, more than 80% of the pregnant women do not get any antenatal care during their pregnancy period. Therefore; increasing antenatal coverage is essential and more feasible way to provide service in door step of the women in the rural community.

By analyzing the situation of low utilization of antenatal services, several approaches can be formulated and applied when developing the strategies to increase antenatal coverage. There are some of the strategies which would be practical, possible, and effective steps to improve antenatal service utilization such as increasing access of antenatal services by community-based health workers i.e. the TBAs, acceptable health service through female to female approach, upgrading existing knowledge, attitudes and practices of TBAs to enhance their performance, emphasis on IEC activities among community members regarding needs of antenatal services, use of low technology for detection of high-risk pregnancy as HBPR, and establishment of co-ordination among the health workers.

2.6.1. Increasing access of antenatal services

TBA can provide antenatal care to women which include simple procedure of antenatal care including high risk pregnancy detection and refer, prenatal teaching, encourage women to use available antenatal service for tetanus toxoid immunization, iron folic supplement. In the context of Nepal where resources are scarce, and limited, role of the community based health workers become more significant in delivering

health care services. Minimum but essential health care service can be provided through these workers so that coverage is increased .

It is estimated that 60 to 80 percent of births in developing countries occur in the home attended by TBA and relatives. Therefore, many countries have decided to train TBA because they are practitioner and accessible to and chosen by women. The WHO, UNICEF and United Nation Population Fund promote the training of TBA in order to bridge the gap until all women and children have access to acceptable, professional modern health services (Sibley et al, 1997). The author again adds that TBA are most often trained to refer women for prenatal care, to recognize and refer women who are at risk of or having complications occurring antepartum, intrapartum and post partum period, to conduct safe delivery, and to offer selected family planning.

2.6.2. Acceptable health services through female to female approach

A TBA is almost a female exist all over the developing world helping women through their pregnancy to post natal period. She conducts up to 95 percent of the rural and 70 percent of urban birth in the third world (WHO, 1992). 92.5 percent of birth in both urban and rural areas of Nepal. occur within the home with the assistance from relatives, neighbor, TBA or without any attendant present. Thus, local resources are utilized with only a handful individuals seeking outside assistance and care during the events surrounding birth.

Furthermore, traditions do not exist for care during pregnancy and helping at birth is not viewed as requiring any special skill except in the case of complication. Studies have further shown that in Nepal, there are ethnic and geographic distinctions in the use of TBA with wide variation in the role played by TBA in different communities. Within some communities or neighborhood, TBA is usually well accepted by seeking her advice, sometimes more than that of a nurse, midwife or even a doctor. A TBA can be the passport for entry into most homes and communities in developing countries. TBA in Nepal is local resource that exist and are being utilized within the rural communities, providing traditional care which is culturally accepted and which is considered to be crucial to maternal and child survival.

2.6.3. Improvement of existing knowledge, attitudes, and practices of TBAs

Since TBA does not have any formal training. Unknowingly and innocently, she can do a lot of harm to mothers and babies by incorrect practices. However not all practices of TBA are harmful. They do lot more good than harm. This is an important consideration in the training of TBAs (WHO, 1992). The training of TBA globally has been recognized as an effective and cost effective means of reducing maternal and infant mortality in developing countries where modern medical services are unable to sufficiently reach the community, TBAs are the only resources available to village (MOH, Nepal, 1993).

History of TBA (Sudeni in Neplese term) training in Nepal, were being conducted since 1973 with the initiation of United Mission to Nepal. (UMN) and many

other NGO and INGO however, it is only since 1987 that there has been a national program run under the auspices of the Division of Nursing.

John Snow Inc. conducted 11 months in-depth study of birth and TBA in Nepal (Levitt, 1988) to investigate the effectiveness and impact of TBA training. The findings show that training made a difference in comparison to untrained TBAs. United Mission to Nepal has published the results of statistics collection following years of training on one district, whatever factors contribute and presence of primary health care program is obviously very significant, it is clear from the data that training of TBAs must have a significant effect on maternal and child health indicators. On the basis of records kept for 1990-1991 by village health workers, the infant mortality rate is less than one third of the national rate, the maternal mortality is less than one tenth of the national rate and rate of population growth is 0.69 percent against 2.1 percent nationally. 27 percent of the women who attended antenatal clinic reported having been referred by TBAs. Out of 552 deliveries, 6.5 percent women referred to hospital by TBAs. This represents a six fold increase in referral since 1983-1984. The tetanus toxoid 2 coverage for the areas is 40 percent almost double the reported national figure (Sharma, 1970; Maharjan, 1990, cited in Hale, 1991; HMG/ UNICEF, 1992).

By looking at the impact of TBA training program in 1987, the Ministry of health concluded that in light of the lack of female health staff in at least half of the health posts in the nation and the need to provide basic maternal care to reduce the high maternal mortality rate, the major maternal health strategy from the next eight five

year plan was to train TBA depending nationwide to reach the rural women and establish TBA training as an integral component of MOH, and strategy in safe motherhood initiative in Nepal. a task force on maternal health set targets for TBA training at 1 TBA for every 3 wards and 1000 population. i.e. 12000 trained TBA nationwide in 1988. The Division of Nursing funds from UNICEF and Redd Barna established the national TBA training program and began to expand TBA training in phase-wise fashion. Today, it has been estimated that there are 9,759 trained TBA across the country. The aim of the program is to strengthen the attitudes, knowledge, and skills of TBA working in the village to improve the standard of MCH services.

2.6.4. Use of low technology in detection of high-risk pregnancy

As primary aim of antenatal care is to identify risk pregnancies, various trial have been undertaken with specially designed antenatal card in an attempt to see if they could improve the recognition of risk factors and so to improve the overall care. 70 percent of at risk factors were identified using the card. WHO have already developed Home- Based Maternal Record which can be used by community health workers including TBA in a primary health care setting to identify risk factor which needs to be referred to health care center. It also provide a simple means that indicates the presence of risk factors which can be monitor for improving health status of woman during pregnancy and useful as a teaching aid for educating woman about nutrition, danger signs, family planning and so on. It can also provide baseline information for national health information system (WHO, 1994). In the context of Nepal, where there is a lack of basic health care facilities, sophisticated technologies are limited

within the center only and screening procedure itself is unaffordable. HBPR seems practicable and simple technology to use.

In this study, I have focused mainly on need of a training program for TBAs on home based prenatal records as a means to provide effective antenatal service to increase antenatal care coverage for pregnant women with high and low risk condition. So that incidence and severity of obstetric complication will be reduced. With this, risk approach can only be considered effective if it is not only encourage attendance and gives adequate support but also if those identified to be at risk are referred to appropriate level of care.

2.6.5. Emphasis on IEC activities

A major IEC should be developed focusing on the importance of antenatal care as an important health measures for the benefits to both mother and baby. All the women need to be educated on issue related to reproductive risk, therefore, informing and orientating media about risk pregnancy should be an integral part of the effort made in this study. Not only the women but activities needs to be extend within the whole community. Dissemination of messages on importance of antenatal services are possible only with community participation i.e. through local community leaders, teachers, women groups, and traditional healers. So that they will be sensitized to use existing antenatal services, especially when risk pregnancy are present and referral management has to be made.

2.6.6. Co-ordination among health workers

As project should remain with female to female approach involving mainly with ANMs, FCHVs, and TBAs as well as Public Health Nurse to strengthen the linkage for referral made by TBAs. In addition, there should be a good relation, co-operation and co-ordination between TBAs, NGO staffs, health workers of sub-health post, health post and primary health center and NGO staffs to improve the service utilization and referral process.

2.7. CONSTRAINTS OF PROGRAM

Despite the effectiveness of the program, since there is poor access to and utilization have maternal and child health services. the MCH service care delivery system is not functioning to its fullest capacities due to female health man power shortage, lack of health services, inadequate numbers and capacities of existing referral sources, and insufficient supervision of staff. For example, half of the health post in Nepal are without any female staff though the two Auxiliary Nurse Midwife (ANM) posts are exist at every health post. ANM, who are the backbone to the MCH delivery care system, are unwilling to be posted in remote areas far from family and basic facilities and without adequate supervisory support, poor utilization of existing services are further exasperated by low level of community participation and awareness regarding MCH. Furthermore, these constraints give a clue to recognize the need of TBA in maternal health care service in Nepal. TBA training can be sustained if constraint has been taken into consideration in the future programming.

2.8. FINANCIAL SUPPORT

Since TBA training program in Nepal is running in a fullest capacity with the fund available from donor agencies as Redd Barna, UNICEF, UNFPA, and Government itself, it also committed to continue support for more years in this regard. The budget available for conducting training i.e. basic and refresher, TOT, and supervision meetings, hence, proposed budget and activities for national TBA training program, fiscal year 1993-1994 was for planning, monitoring evaluation, training supervision, IEC activities, materials, printings, administration support, salaries/allowances and equipment like computer and printers. In addition to that, about 12 NGO and INGO are also supporting on training and supervision in a numbers of district in the country.

2.9. PROGRAM SUSTAINABILITY

Sustainability strategies for community- based program should emphasize capacity building, but referral system and other elements of integration with the broader health care system, strategies that consider only one system level or are based on only one source of support are likely to fail cost recovery strategies in particular, should link curative with preventive care and middle class population with the poor. Effectiveness and sustainability problems appear to be particularly acute in large Government management program and in NGO- initiated activities after replication or taken over by Government (Jack Reynolds, Wayne Stinson, 1991).

2.10. RECOMMENDATION AND POSSIBLE ALTERNATIVES

There is much work to do to improve the effectiveness of the program. For that regular, evaluation process should be carried out to see the impact of the program the i.e the TBA's activities providing antenatal service to women and its impact on the service coverage. There are number of program areas that required improvement, revision and strengthening relation to technical as well as management issues that need to be addressed in the system in the future planning and programming in the following years.

Target should be set with involvement of District Health Office level regarding access to service sites, topographic features, size, population base and traditional ethnic use of TBAs. Another issue is related to poor recording from illiterate TBAs as statistics collected are not always consistent, therefore literacy program should be made available to TBAs. The TBA program management information system requires thorough examination for relevance and for ease of reporting.

TBA trainers as BN or ANM are in need of updating their own midwifery skills, therefore they need refresher training. TBA training should remain female to female program with ANM and Public health nurses as trainers, planners, and supervisors together with strengthen the linkage between the TBA and female community health volunteers, health post staff, and sub health post staff, also the objective of program should address not only training and activity target to be achieved

but also address co- ordination, collaboration, desired service effects, monitoring and financial management.

The link between training and subsequent service expectation is needed and target has to be set for antenatal exam in the district and national level and integration is needed in the MIH system.

As far as management issue is concerned, managing nationwide program requires planning and logistic efforts to reduce the burden on the central level and make the program belong to the district. The TBA program was decentralized which is a loss of tight control of the program, thus, success of the program depends on the management and leadership strengths. By developing the easy to follow planning, training and supervision materials, these wide variation in the program can be kept to a minimum. However, continuous reorienting and training of district and health post staff are required.

Fiscal management has been a problem for the TBA program in the recent years with the decentralization and expansion of the program. During the next couple of years, clear fiscal management plans will need to be developed between the program and donors with the ministry of finance and the auditor general office (MOH, Nepal, 1993)

2.11. AVAILABILITY OF SERVICE WITHIN HEALTH CARE SYSTEM

Safe motherhood policy of His Majesty's Government of Nepal. Ministry of health states to provide essential care for pregnant women to ensure safe delivery, post natal care including treatment of complication of mother and newborn. Following activities has been included in the national level of program regarding antenatal service.

- ANC atleast 3 times during pregnancy
- Risk detection of danger signs, breast feeding
- Prenatal education on nutrition, FP counseling
- Appropriate referral
- Tetanus toxoid immunization
- Anemia prophylactics
- Malaria prophylactics

Family level :

Get family to seek appropriate and timely help from trained care provider as from TBA.

Community level :

Availability of trained maternal health care provider for health promotion, prevention, and provision of basic care, obstetric first aid and referral .

Sub health post level :

Antenatal, post natal care services, outreach clinics, MCHW are available to assist TBA to give antenatal, delivery , and postnatal care at home and ensure referral of for appropriate care, and family planning counseling.

Health post level :

ANM is there to provide life saving midwifery service including obstetric first aid at this level and arrange for referral of needed cases. ANM is to provide supportive supervision to MCHW and TBA in the community level.

Primary health care center level :

Essential obstetric function, treatment of high risk as hypertension, severe anemia etc. are provided.

District level :

Life saving procedure of obstetric emergencies and obstetric complications are managed in this level as per WHO guide. The district level hospital or PHC should serve as first referral level for high risk and obstetric complications, receiving patient with pregnancy related problem referred by health post staff and volunteers as TBA, and FCHV, but most of the district hospital in Nepal, however are not fully staffed and equipped to handle the serious obstetric complications. They must therefore, be questionable as referral sources for complicated maternal cases (particularly those potentially requiring surgery or blood transfusion) until major improvements are made

because of this situation pregnancy in Nepal extremely high risk condition. Even the trained TBA and FCHV, the necessary of backup support and maternal referral network is still very much absent and needs to be address in order to improve maternal and child survival.

2.12. CONCLUSION

Pregnancy is the greatest risk to women's life and major public health problem having highest maternal mortality from its complication. Among 200 million pregnant women per year in the world, half a million die, suffer disabling life long with cause related to pregnancy and childbirth. Most of the deaths occur in at risk pregnancy and about 80 to 90 percent of these illness can prevented by relatively simple means and with provision of antenatal services (Lumbiganon, 1988). Maternal mortality in Nepal is extremely high (539 / 100000) in comparison to neighbor countries. About 40 percent of pregnancy are in at risk condition and subjected to have obstetrical complications and die due to numbers of socio cultural, educational, economical factors with inadequate access to antenatal service and lack of female staff in the health center. The number and severity of obstetrical complications can be prevented by increasing antenatal care coverage in the community so that high-risk pregnancy can be detected earlier, treated, manage, and refer in the health care center.

Several studies have shown the effectiveness of antenatal care in reducing the risk during pregnancy. Many countries are using specially designed antenatal cards to

use as a tool to detect the risk factors, and so to improve overall care during pregnancy. About 70 percent of risk factors were identified with the use of this (Sims, 1978; Abraham and Joseph, 1985; Bullough et al. 1990).

A study on cause of maternal mortality was carried out from 1981-1991 in Kavre District, Nepal (Rijal, B., Manandher, R., Hamal, R., Upreti, P., 1991). The study found MMR to be 1217/ 100,000 live births from the causes such as hemorrhage, sepsis, eclampsia and obstructed labor. It has been found that out of 70 deaths, 22 occurred at the time of pregnancy and out of 3085 households interview, 575 houses responded that they went to hospital or health clinic for antenatal checkup. This shows that only a few families as about 19% of the total received antenatal care. This could be the one main reason for high maternal deaths in the country. The study report strongly recommended to provide good and timely antenatal care to pregnant women using various resources including Traditional Birth Attendants to prevent the complications and deaths of the mothers.

One of the major factor of pregnancy complication to arise is underutilization of existing antenatal service. Many studies have been supporting on significant role of TBA in reducing deaths of mother and child in the countries where access to health service is limited. TBA can provide effective antenatal care to those with high and low risk in the community, identify high risk using the tool, refer them and encourage them to use antenatal services for substantial increase in antenatal coverage. Therefore, specific training is necessary to upgrade the knowledge, attitudes and practices of TBA in providing effective antenatal service which would be practical, possible and effective

step in this regards. Training of Traditional Birth Attendants has been seen as a way of bridging the gap until all pregnant women have access to affordable and acceptable health services. This intervention can work if there is availability of supporting action to strengthening antenatal service is managing high-risk pregnancy with provision of proper referral network, transportation, and emergency obstetric intervention.

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