

CHAPTER 2

LITERATURE REVIEW



2.1 Health Status

The health status of the population in Central Sulawesi province is regarded among the lowest in the country. On the basis of 1985 population surveys, the infant mortality rate in Central Sulawesi was 105 per 1,000 live births, compared to 71 per 1,000 live births in the national rate (*Health profile of Central Sulawesi, 1991*). Infant mortality rate is a useful indicator of the health status not only of infants, but also of the whole population and of the socioeconomic condition under which they live.

In regard to the causes of infant death, national health survey conducted in 1986 by the Department of Health shows that about 28 % of deaths were caused by preventable diseases like tetanus, measles, diphtheria and whooping cough. Tetanus alone accounts for 19% of the total. Neonatal tetanus is closely related to treatment of the umbilical cord during delivery. Another large fraction is due to birth injuries and congenital anomalies. These prenatal and congenital deaths are probably a consequence of poor maternal health.

The information concerning maternal health is very limited. Household Health Survey 1986 indicated that maternal mortality rate (MMR) in Indonesia is 450 per 100,000 live births. This figure suggests that the MMR in Indonesia is still high as compared to other neighboring countries such as Malaysia (59 per 100,000 live births), Thailand (270 per 100,000 live births), Singapore (11 per 100,000 live births), and particularly high in comparison

with developed country such as USA (9 per 100,000 live births), (*NIHRD, MOH, 1991*). The maternal mortality rate reflects the death risk of mothers during pregnancy and childbirth. The survey found that the death risk is influenced by general socio-economic conditions, nutrition and sanitation as well as maternal health care.

Surprisingly, the level of antenatal care was relatively high. About 68 % of pregnant mothers received some antenatal care. However, the proportion of mothers who did not have antenatal care is more than four times higher in the rural areas (26 percent) than in urban areas (6 percent). Urban women are more likely to use facilities such as hospitals and private doctors while in the rural areas, antenatal care is more frequently provided by health centers and health posts.

Indonesia Demographic and Health Survey (IDHS) 1991 shows that about 85 percent of all births in Central Sulawesi were delivered at home. Traditional birth attendants (TBA) were found to have a very important role in delivery assistance, a finding which is consistent with the proportion of births taking place at home.

Sixty-eight percent of births were assisted by TBAs while only 20 percent were assisted by nurse-midwives and 0.3 percent by doctors. In general if TBA and either midwife or doctor are present at a delivery, it may be because the woman had a problem and was referred by TBA to a either doctor or midwife.

In summary, the health status of people in Central Sulawesi as indicated by IMR and MMR is still considerably low. Among other factors, poor maternal health care including antenatal care and delivery assistance among

rural women is still considered as a primary factor in determining the health status.

2.2 Interventions of Maternal Health Care

In District of Donggala, and generally in Indonesia, health centers are available in every sub-district. Each health center is serving an average of 21,000 persons. In order to meet other basic health needs of people, the government has built a sub-health center to serve 2-3 villages in the district. Additional facilities for health care include: district hospitals, so located as to be able to accommodate referrals from health centers, and Provincial hospital located in the capital of the province. In addition, five important health services - maternal and child health care, nutrition, immunization, diarrheal disease control and family planning - are provided at the village health post (posyandu) on a monthly basis.

Various interventions have been proposed and implemented to improve maternal health care, but only few studies dealt with the provision of midwives including community health workers and TBAs have been reported.

Recognizing the important role of TBA, from the early 1970s WHO has actively encouraged countries to initiate programs which train and utilize TBAs as extension of the maternal health services. Indonesia has initiated a TBA training program since 1973, and yet the maternal outcome have not been improved significantly in spite of intensive efforts to train TBAs. Thouw claimed that the TBAs performance were very poor. He added that trained TBAs still lack of certain skills and knowledge in recognizing risk factors (Thouw, 1992).

The effort of replacing TBAs by midwives has been carried out by some countries. Egypt's experience in replacing TBAs by fully qualified midwives shows that 80 percent of deliveries were still attended by TBAs even though there have been enough qualified midwives (Mosley, 1985). In contrast, in the Sudan, the village midwife is the most common health worker in preference to the traditional healer. High percentage of mother prefer to visit midwife for consultation when they have problems. High percentage of women also consulting the village midwife for sick and healthy children (Bella, 1984). Furthermore, a study conducted to assess the obstetric care coverage provided by the Sudanese village midwives shows that 76 percent of deliveries in rural areas were attended by the village midwives, and only 11 percent of mothers in the study delivered by TBAs (Aligani, 1992). However, one should note that the village midwives covered in the Sudan study had been in practice for 6 to 16 years, which implies that they might have been known and accepted by community.

Recognizing the lack of acceptance of young woman and inexperience midwives by mothers, the government of Siera Leone has conducted training of a new category of health workers, the Maternal and Child Health (MCH) aide, the local literate and mature woman recruited from the place where they would eventually be posted, and become the supervisors of the TBAs who continue to carry out most of deliveries (Kargbo, 1992). The effect of the approach on maternal health care has not been reported.

The effect on mortality of community-based maternity care program has been studied in rural Bangladesh. Comparison on direct obstetric maternal mortality ratios has been made between the villages with trained

midwives and a neighboring control area without midwives. The study found out that during the following 3 years, the ratio was significantly lower in the program than in the control area (1.4 vs 3.8 per 1000 live births). The finding suggests that maternal survival can be improved by posting of midwives at village level. Again it should be noted in the study that midwives were properly equipped to treat immediately obstetric complication at their onset, and there was backup by an effective chain of referral (Fauveau, 1991).

As expected, research findings on clinic-based maternity care program in developed country shows the similar results. Study on cost effectiveness of nurse-midwife program in rural Georgia, United States, which is targetted to pregnant women of low to moderate income who had no private physician, shows that the program had been able to reduce the neonatal mortality rate and low birthweight. The program was also considered cost effective since it was able to decrease the expenditures for perinatal care (Reid & Morris, 1979).

From those several findings, one may interpret in several ways. First, that TBAs still play an important part in the maternal care, and it might be true for most developing countries. Second, studies indicate that mothers are beginning to accept scientific health care when there is no social distance between midwife and mother. Third, studies show explicitly that mothers in rural areas for some reasons prefer to deliver at home. Fourth, posting of nurse-midwives in villages would have the best potential for saving lives if they are given proper training, means, supervision and back-up as well as are accepted by community especially women. Fifth, the inadequacy of health manpower would dictate the delegation of health care task to the least trained health personnel, even to the community health workers.

Some experts claimed that the outcome of programs related with maternal health depends not only on a single intervention but also on the functioning of the whole system including socioeconomic status of a family. This condition makes the program difficult to evaluate. Bobadilla (1992), a journalist from Population Health and Nutrition Division of the World Bank, suggested that at least six dimensions of the program could be evaluated considering the relevance to assess the success of the health programs, they are: coverage, equity, quality, women's satisfaction, efficiency and cost-effectiveness.

Several types of analysis of the maternal care programs have been used, and those that are related with the evaluation of the midwives are as follows:

a) Case-control studies

One study has been conducted to assess the effect on mortality of community-care program in rural Bangladesh in 1988. The trained midwives were posted in the villages, and asked to attend as many home-deliveries as possible, detect and manage obstetric complications at onset, and accompany patients requiring referral for higher level of care. The effect of the program was evaluated by comparison of direct obstetric maternal mortality ratios between the program area and a neighboring control area without midwives. Maternal mortality ratios were then assessed in both areas during the 3 years preceding the start of program. In this study the confounding factors was controlled by choosing the similar confounding characteristics, including coverage and use of other health and family planning services, in both areas (Fauvau. et al., 1991)

The case-control studies are the most inexpensive method, but not the simplest. Its complexities derive from the difficulties to draw a representative sample of controls and the need to specify, measure and statistically control for all confounding variables.

b) Cross-sectional studies

A study to evaluate the village midwife training program was conducted in Sudan in 1983. The evaluation included the midwives' knowledge, their performance as child care providers and health educators, and the mother's preference. Village midwives and mothers were randomly selected from study areas. Measurements and questionnaires were used to collect data as well as observation of midwives in action (*Bella, 1984*). The questionnaire for midwives was designed to determine the characteristics, knowledge, and practice regarding antenatal care.

The same type of study was also conducted to evaluate the role of the village midwives in antenatal care services in Sudan in 1991. The obstetric care coverage was assessed; the village midwives were interviewed; and a sample of mothers who delivered in the previous 6 months was also interviewed. The questionnaire was designed to investigate the use of midwives services (*Altigani, 1992*).

c) Cost-effectiveness analysis

The study in rural Georgia, USA, in 1979 illustrating the estimates of infant health status and perinatal care expenditure before and after the implementation of a nurse-midwife program. The comparison examines neonatal mortality, birth weight, gestational age, and the presence of symptoms of disease as measures of birth outcome. Three types of

expenditure were estimated including hospital care, physician care and care delivered by nurse-midwives (*Reid and Morris, 1979*).

This type of study has the advantage of producing information on units that are comparable across all the health programs. It considers information on the amount and complexity of the inputs, expressed in monetary units, and the outcome, expressed in some composite measure of disease.