FACTORS INFLUENCING THE DECISION-MAKING REGARDING PLACE OF DELIVERY AMONG MOTHERS WITH A CHILD AGED LESS THAN ONE YEAR IN THREE PROVINCES OF LAO PDR

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SUMMARY

In Lao PDR, maternal mortality ratio is 660 per 100,000 live births, which is the highest in the Asia-Pacific region. This study is to explore the factors influencing the decision-making of the mothers for choice of place of delivery for their last child. A cross-sectional study was conducted from January to March, 2008. One district from each province was selected using a cluster sampling technique. All catchment villages of the district hospital in each district were recruited (30 villages in total). From those villages, 311 mothers participated in the study. Half of the mothers delivered their youngest child at the hospital (51.1%). Mothers with more than 4 ANC visits were 2.3 times (AOR= 2.3, p<0.026) more likely to deliver at the hospital compared to delivering at home. Mothers who had to travel for less than 45 minutes from home to health facility were 2.3 times more likely to deliver in hospital (AOR= 2.3, p<0.042), and mothers whose husbands were government officials, or a daily wage worker were 8.3 times and 5.2 times to deliver at a hospital compared to home respectively (AOR= 8.3, p<0.000 and AOR= 5.2, p<0.004). All of them were more likely to deliver at hospital compared with home delivery. Factors affecting the decision making of mothers to utilize health facilities for their delivery were: mothers whose husbands were government official and daily wage workers, and travel time to the health facility was less than 45 minutes. There was a strong association between the number of antenatal care visits and delivery at health facilities. So, there is a need to promote ANC among mothers living far from the hospital to use hospital delivery, and provide community education to create awareness of obstetric complications, as well as maternal morbidity and mortality.

1. Introduction

High maternal mortality has continuously been reported worldwide; with 98 percent of cases occur in the developing world, particularly in Sub-Saharan Africa and South Asia, where more than 529,000 women die annually from treatable or preventable
complications of pregnancy and childbirth. The majority of deaths are from hemorrhage, prolonged/obstructed labor, and post-partum sepsis, complications of abortion, pre-eclampsia/eclampsia, ectopic pregnancy, and ruptured uterus.

In Laos, the proportion of births attended by traditional birth attendants (TBA) is only 13%, and births attended by doctors 8%, and nurses 3% and midwives 2% respectively. Because mothers often lack knowledge about obstetric complications at the community level, decision-making for referral to services at health facilities is often delayed. The utilization of health care services may depend on level of education, cultural beliefs, practices, gender discrimination and economic situation. It is well known that increased income has a positive effect on the utilization of modern health care services. The availability of maternal health care facilities including the distance to them showed a statistically significant association with the utilization of safe delivery services. Several other studies also found that the distance to health care services, especially in developing countries, plays an important role in utilization of health services. In a study conducted in Bangladesh, Rahman et al (date) found that geographical distance is one of the most important determinants of health care service utilization in rural areas. Previous studies also support that husbands’ concern about pregnancy complications has a significant and positive impact on the utilization of health care services, which was very important for rural women in need for services.

The government of Lao PDR has set as its goal to reduce the maternal mortality ratio to 185 deaths per 100,000 live births by the year 2015. Safe Motherhood and Safe Deliveries and Neonatal Care (SDNC) has developed a strategic plan to reduce maternal mortality focusing on improving access to quality reproductive health services including family planning, antenatal care, and delivery care, especially emergency obstetric services, postnatal care and better referral systems.

This study attempts to: Analyze the factors influencing the decision-making of the pregnant women for choice of the place of delivery and determine the factors influencing the decision-making of mothers when choosing the place of delivery for their last child.

2. Methods

2.1. Study site

The study was carried out in Borikhamxay, Khammuane and Savannakhet provinces, which covers a population of 1.4 million, accounting for 24.7% of the national population, one district from each province was selected to be the site for community based survey.

2.2. Study design

This was a cross-sectional study, which was carried out from January to March,
2008 in Borikhamxay, Khammoune and Savannakhet provinces. The study consisted of hospital and community based surveys. All hospitals in these provinces were recruited for the hospital-based survey. From each province, a district was selected for a community-based survey.

2.3. Study population

Mothers with a child aged less than one year-old living in the catchment villages of the selected district hospital were invited to participate in this study.

2.4. Sampling method and sample size

The sample size for the community survey to enroll mothers was calculated by Epi-info 6, version statistic program, using a 26.7% prevalence of women who delivered at the health facilities in central provinces, with 95% confidence level with a 5% error margin. The estimated sample size was 303 mothers living in the catchment villages of three selected district hospitals.

Multi-stage sampling was employed to select 3 districts and 30 villages from three provinces. From the three selected provinces, at the first stage, 3 districts were selected by using simple random sampling from three provinces, and then at the second stage, 30 villages were selected from 3 districts by using simple random sampling also. The household survey was conducted in the selected villages by a systematic random sample. The lists of mothers was obtained from the Extended Program of Immunization (EPI) office in the selected villages to ensure that all mothers who meet the inclusion criteria, i.e. all mothers with children less than one year of age and who were living in the catchment villages of the selected hospitals, were included.

2.5. Study tools

A separate semi-structured questionnaire was also developed which focused on collecting data from mothers. It explored socio-demographic information such as age, occupation, number of children, education, family income, and delay in deciding to seek care.

2.6. Ethical considerations

Study permission was obtained from the ethics review committees of the University of Tokyo, Japan, and the University of Health Sciences, Ministry of Health, Lao PDR. At the beginning, I and research assistants explained to all participants in this study about their rights i.e. to accept or to refuse to participate in survey. Written informed consent forms were obtained from all selected participants before the interview started.

2.7. Data collection

A pilot study was conducted before the actual study. I trained six research
assistants for data collection. The community survey was conducted with the help of six research assistants, village health volunteers, health workers from all levels of health related institutions such as villages, districts, and provinces, who were familiar with the local situation, and also all of them were trained on interview techniques prior to the field survey.

2.8. Data analysis

Data analysis was done using SPSS program version 11.0 for window. Separate spreadsheets were made to enter data from different levels. Univariate, and multivariate analysis were performed. $P$-value of less than 0.05 at 95% confidence intervals was considered as statistically significant in my study.

3. Results

3.1. Socio-demographic information

A total of 311 mothers participated in the survey (Table 1). Their mean age was 25.7 (± 6.1) years. The majority of the target population (74.6%) was lowland Lao (Lao lum in Lao language); and Midland Lao (Lao Theung in Lao language) were 25.4%. 68.8% of mothers had a household income of more than 300,001 kip per month. Around 41.5% of mothers had up to primary school level education, 18.0% and 15.1% of mothers completed junior high school and high school respectively, while 21.9% of mothers were illiterate. Almost 16.1% of respondents’ husbands were illiterate, while 28.3%, 22.8% and 23.5% had completed education up to primary, junior high school and high school levels, respectively. The majority (63.3%) of mothers were farmers while 22.2% were housewives and 56.9% of fathers were farmers. Only 16.1% of fathers were government officials and 27.0% of fathers were daily wage workers. The majority (61.1%) of mothers had less than two children. Almost 88.1% of mothers had gone to health facilities by personal transportation and 63.7% of mothers took less than 45 minutes to get to the hospital from their house.

3.2. History of reproductive health

The mean parity of mothers was 2.6 (± 2.0). 62.1% of mothers had experienced parity less than two times. The mean (SD) gravida of mothers was 2.8 (± 2.1). 57.6% of them had been gravid less than two times. It was noted that 83.3% of mothers had never had an abortion, 51.1% of mothers had delivered their last child in public hospital, 20.3% of births were attended by TBAs, and in 96.5% of the cases the last child was born through normal vaginal delivery. It was found that 66.6% of mothers attended antenatal care during the last pregnancy, of which 38.2% had more than 4 ANC visits. Almost 71.4% of mothers had an antenatal card or booklet. According to the ANC card, 93.3% of mothers received an iron/folic acid supplementation; 77.7% of mothers were immunized by TT vaccination; while 18.9% of mothers had a blood cell count; and only
16.2% of mothers had urine test. We found only a few (8.7%) mothers had hepatitis B screening (Table 2).

### 3.3. The associations of place of delivery with key independent variables

The detailed results of the univariate analysis are shown in Table 10. It was noted that Lowland Lao mothers were more likely to deliver at health facilities (OR= 3.7, p<0.000) than Midland Lao mothers. Mothers having a high household income i.e., more than 300,001 kip per month, were more likely to deliver at health facilities (OR= 2.4, p<0.000) than others. Mothers and their spouses who were educated were more likely to use health facilities for deliveries (OR= 5.1, p<0.000 and OR= 4.1, p<0.000) than those who were uneducated. Mothers whose spouses were government officials and daily wage workers were more likely to deliver at health facilities (OR= 4.2, p<0.000 and OR= 1.4, p<0.001) than mothers whose spouses were farmers. Mothers who already had less than two children were more likely to deliver at health facilities (OR= 2.3, p<0.001) than mothers who had more than two children. Mothers who had to travel for less than 45 minutes to reach hospital were more likely to deliver at health facilities (OR= 3.5, p<0.001) than mothers who had to travel for more than 45 minutes. Mothers who attended antenatal care during the last pregnancy were more likely to deliver at health facilities than mothers who did not (OR= 7.3, p<0.000). In addition, mothers who had more than 4 ANC visits were more likely to deliver at a health facility than mothers who had visited ANC less than 4 times (OR= 1.9; p<0.043). Furthermore, mothers having an antenatal card or booklet during pregnancy were more likely to deliver at health facilities (OR= 2.5, p<0.003) than mothers who didn’t have an antenatal card or booklet. In line with the above, mothers who had TT vaccinations were more likely to deliver at health facilities (OR= 2.4, p<0.032) than mothers who did not have TT vaccinations.

In the multivariate analysis, we found that the significant variables included occupation of spouses. It was noted that mothers whose spouses were government officials or daily wage workers were more likely to deliver at health facilities (AOR= 8.3, p<0.000 and AOR= 5.2, p<0.004) than farmers. It was also found that mothers who had 4 ANC visit were 2.3 times as likely to deliver at a health facility (AOR= 2.3, p<0.026) compared to mothers who visited less than 4 times. In addition, we found that mothers who had to travel for less than 45 minutes from home to a health facility were more likely to deliver at health facilities (AOR= 2.3, p<0.042) than mothers who had to travel for more than 45 minutes (Table 3).

### 4. Discussion

Poor maternal health is a serious problem in the Lao PDR, whose maternal death rates are estimated to be the highest in the Southeast Asia. This study also revealed a higher proportion of hospital delivery (51.1%) in a targeted area than a study in
Xiengkhuang province (29%) and the National health survey in 2005 where 16.8% of mothers were reported to deliver at health facilities. This difference in results is likely to be due to the location of these villages (i.e. different sampling size and sites), which are situated close to the district hospitals, allowing easy access to care by foot, bicycle, or motorbike.

Regarding factors affecting the decision making of mothers to utilize facilities for delivery, husbands played valuable roles in helping to make decision to seek care at health facilities. Time required to get to hospital (<45 minutes) was strongly associated with health facilities delivery. This result was also in line with a study conducted in Bangladesh that showed that the distance was found to be barrier in the utilization of safe delivery services. One of the most important factors for mothers to choose delivery at health facilities was the utilization of antenatal care services during pregnancy. Similar finding were also reported in a study in Uganda.

5. Conclusions and Recommendation

To reduce maternal mortality among these three provinces, the pattern of health service utilisation of mothers in three provinces revealed that besides utilization of antenatal care services and support from husbands, the travel time to facility i.e., less than 45 minutes was also associated with hospital delivery. So in addition to multiple measures to improve maternal health, there is also a need to promote ANC among mothers living far from the hospital to promote hospital delivery.

Finally, measures must be taken to increase the people’s confidence in the quality of services available from the public sector. Through education there is also a need to create an awareness of obstetric complications and maternal and prenatal morbidity and mortality issues in the communities. This will help communities to understand the risks involved in pregnancy, and thus are able to take timely and appropriate decisions in saving women lives.

REFERENCES


