THE PERCEPTIONS OF SAFE DELIVERY AMONG MARRIED WOMEN OF REPRODUCTIVE AGE BETWEEN 20 AND 49 YEARS OLD IN PARKGNEUM DISTRICT, VIENTIANE CAPITAL, LAO PDR

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ABSTRACT

A cross-sectional study was conducted to determine factors relating to the perceptions of safe delivery among married women of reproductive age living in Parkgneum district, Vientiane Capital, Lao PDR. Data were collected from 9th to 30th January 2009 by interviewing 160 women aged between 20 and 49 years old by using a structured questionnaire. Data analysis was performed by using Descriptive Statistics, Chi-square test and Multiple Logistic Regression.

The study found that 53.1% were aged between 20 and 34 years old and 70% of them were farmers. Most of the women had a good knowledge about safe delivery, while only 27% of them had poor knowledge about safe delivery. 46% of respondents had difficult access to health services, 49.4% had difficult access to safe delivery information and 57.5% of them received good support from their husbands. 50% of respondents had negative as well as positive perceptions about safe delivery.

The study revealed that age, access to safe delivery information and husband support were associated with perceptions of safe delivery, OR= 2.224 (95% CI = 1.138-4.347), 2.354 (95% CI = 1.206-4.596) and 2.410 (95% CI = 1.198-4.847 respectively).

It is recommended that access information be increased and that the husband's support be promoted. These are critical to encourage women to have access to safe delivery services.

KEY WORDS : PERCEPTION/ SAFE DELIVERY / MARRIED WOMEN OF REPRODUCTIVE AGE.

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LIST OF ABBREVIATIONS

EmOC	:	Emergency Obstetric Care
EmONC	:	Emergency Obstetric Neonatal Care
FP	:	Family Planning
ICPD	:	International Conference of Population and Development
IV	:	Intra Venous
IM	:	Intra Muscular
Lao PDR	:	Lao Peoples Democratic Republic
LRHS	:	Lao Reproductive Health Survey
MICS	:	Multiple Indicators Cluster Survey
MMR	:	Maternal Mortality Ratio
MDGs	:	Millennium Development Goals
MWRA	:	Married Women of Reproductive Age
MTPs	:	Medical Trained Personnel's
MVA	:	Manual Vacuum Aspiration
PRECEDE	:	Predisposing , Reinforcing , Enabling and small Construct in Education/Environment Diagnosis and Evaluation
PROCEED	:	Policy, Regulatory and Organization Construct in Educational and Environment Diagnosis.
SBAs	:	Skilled Birth Attendants
SAFE	:	Skilled Attendance For Everyone
TFR	:	Total Fertility Rate
UNFPA	:	United Nation Population Fund
WHO	:	World Health Organization
WPRO	:	Western Pacific Regional Organization

CHAPTER I
INTRODUCTION

1.1 Rationale and justification of the study

The maternal mortality ratio (MMR), or level of maternal deaths compared to live births, is one of the most sensitive health indicators. This indicator also highlights the great differences in access to health care between developed and developing countries. The number, and percentage, of maternal and infant deaths are relatively high in developing countries. Improving maternal health and reducing maternal mortality have been key issues and concerns of several international summits and conferences, including the Millennium Summit in 2000. One of eight Millennium Development Goals (MDGs) is to reduce the maternal mortality ratio by three-quarters between 1990 and 2015 (1).

In 2005 the World Health Organization (WHO) estimated there were 536,000 maternal deaths worldwide. Approximately 99% of global maternal deaths, however, occurred in developing countries, with 86 % of maternal deaths occurring in Sub-Saharan Africa and South Asia. A woman's lifetime risk of encountering a maternal death is 1 in 75 in developing countries, compared to 1 in 7,300 in developed regions (1). The MMR in Africa is 900 per 100,000 live births , while it is 450 per 100,000 live births in South East Asia, 420 per 100,000 live births in the Eastern Mediterranean, 99 per 100,000 live births in the Americas, 82 per 100,000 live births in the Western Pacific, and 27 per 100,000 live births in Europe. About 80 % of all maternal deaths are related to specific disorders during pregnancy, childbirth, or the post-partum period, such as severe bleeding, infections-hypertension disorders in pregnancy, obstructed labour and complications associated with unsafe abortion (2).

In developing countries skilled birth-attendants assist in only 60 % of all deliveries. This can be translated into 50 million home deliveries without any assistance from skilled health personnel. There are many reasons why women do not receive care before, during, and after childbirth. This includes the unavailability of professional care, low quality of services, lack of access to health facilities, and culture beliefs. To improve maternal health gaps in the capacity and quality of health care delivery systems and barriers to accessing health services must be identified and tackled at the community level (3).

The MMR in Laos is about 405 per 100,000 live births (4). This figure is higher than that of neighboring countries: Thailand 44, Vietnam 130, Myanmar 360, and China 56. Every day at least 3 women die in Laos during pregnancy. This means 1,300 women die each year. In Laos a woman's lifetime risk of maternal death is 1 in 25, which is the highest for South East Asia (2).

Although the MMR in Laos has decreased, many obstacles remain to achieve further improvements in maternal health. In rural areas the health care delivery system does not function well, and the proportion of births attended by skilled health personnel is only 18.5 %. The vast majority of children (84.8%) are born at home, while only 12.8% of deliveries take place at a health facility. Relatives (63.4%) and Traditional Birth Attendants (12.1%) assist with most deliveries and the rest was deliveries by themselves. Laos's Total Fertility Rate (TFR) is 4.5 children per woman, one of the highest in the region. Almost one-fifth (19%) of adolescent girls (15-19 years) in rural areas are already mothers or pregnant with their first child. Additional issues affecting maternal health in Laos include complications due to illegal abortions and the high incidence of malaria in some geographic areas. Laos has 49 distinct ethnic groups that generally live in remote mountainous areas. The ethnic minorities have higher rates of poverty and a poorer health status than that found amongst the lowland ethnic Lao. There are a number of challenges that need to be overcome in order to improve this situation. These include the poor health infrastructure, the geographical remoteness of many ethnic communities and socio-cultural barriers to ethnic groups seeking maternal health services. Language is also a barrier as many

ethnic minority people do not speak Lao. The cultural practice of women delivering, on their own, in many ethnic minority communities is a major barrier to accessing Emergency Obstetric Care (EmOC) in case of emergency. Availability to high quality emergency obstetric care is limited in many rural areas. A history of low quality of care and the lack of medical supplies and equipment at many health facilities has discouraged clients from using local health services (4,5).

Approximately 60 % of the total expenditures on health are borne by the patient or his/her family, and in many cases the poor are unable to afford health services. There has, however, been a marked improvement in contraceptive prevalence over the last decade, from 14% in 1994 to 38 % in 2005(4). This development should have reduced the total number of maternal deaths by reducing the number of unwanted pregnancies, especially amongst high-risk women. But this increase in the access and acceptance of family planning (FP) services has not been uniform throughout the country. Women living in rural and remote areas still have limited, if any, access to contraceptive services, and the overall unmet need for contraception is still approximately 40% in Laos (2).

Pakgneum district is 1 of 9 districts that comprise Vientiane Municipality. The district center is located 60 kilometers from the nation's capital. Pakgneum has a land area of 560 square kms. It shares borders with Thailand in the east, Sai Thany district in the west, Hat Sai Fong in the north, and Tha Pha Bath in the south. The total population is 45,684, of which 22, 597 are females. It contains 53 villages with 8,144 households, with average household size containing 5-6 people and 70 percent people living in rural area. Parkgneum has one district hospital and 9 health centers. The total number of married women of reproductive age is 8,693. In 2007 only 31.2% of the married women of reproductive age were used any contraceptive method. Only 44.2% of pregnant women received antenatal care during their pregnancy. More than half (58%) of these women delivered at home, 6.8% of which did not receive any assistance at the time of their delivery. In brief this situation, as highlighted by the above-mentioned figures, represents annual health data reported by the Mother and Child Health Section of the nation's capital (6).

As one known, perception influenced acceptability and utilization of services. To increased the percentage of safe deliveries a proactive approach should be implemented before women get pregnant. That means the appropriate target group is married women of reproductive age (MWRA). There have been some studies about MWRA's perceptions of safe delivery. However, there has been no such research in Parkgneum district, Ventiane capital, Lao People Democratic Republic (Lao PDR). Therefore, the main ideological of study is assessment the knowledge and identify the factors relating to safe delivery that would be contributed into plan development for mother and child health pragramme in rural area and develop guideline of mother and child health services.

1.2 Research questions

1.2.1 What perceptions do married women of reproductive age between 20 and 49 have with regard to safe delivery?

1.2.2 What factors are associated with the perception regarding safe delivery of married women of reproductive age between 20 and 49 years old ?

1.3 Research Objectives

1.3.1 General objective

To determine factors relating to the perceptions of safe delivery among married women of reproductive age between 20 and 49 years old in Parkgneum district, Vientiane capital, Lao PDR.

1.3.2 Specific objectives

1.3.2.1 To assess the level of knowledge and perceptions that married women of reproductive age have with regard to safe delivery.

1.3.2.2 To determine the relationship between predisposing factors and perceptions of married women of reproductive age with regard to safe

delivery.

1.3.2.3 To determine the relationship between enabling factors and perceptions of married women of reproductive age with regard to safe delivery.

1.3.2.4 To determine the relationship between reinforcing factors and perceptions of married women of reproductive age with regard to safe delivery.

1.4 Research hypothesis

There are relationship between the predisposing factors, the enabling factors, the Reinforcing factors and perceptions of safe delivery among MWRA between 20 and 49 years old.

1.5 Conceptual framework

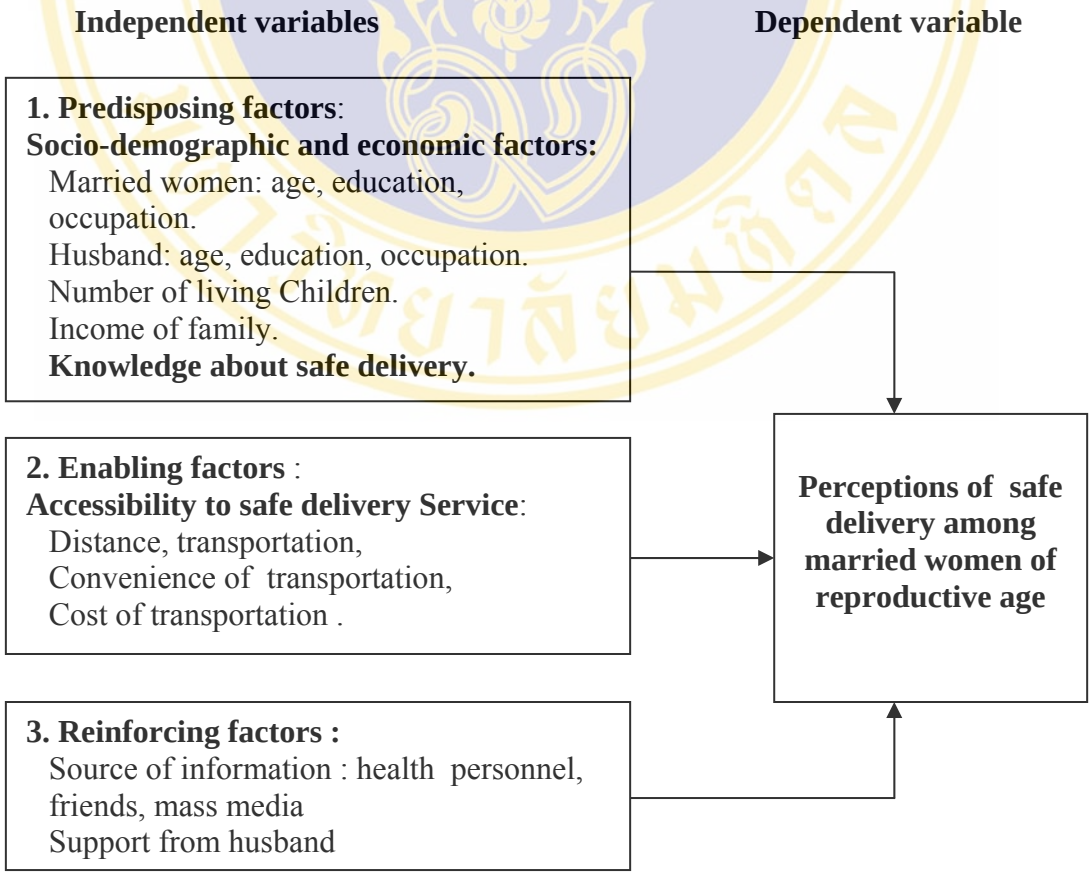


Figure 1 : Conceptual Framework

1.6 Operational definition of study variables

Safe delivery : it means how to provide obstetric care to a woman to ensure that both mother and newborn infant do not encounter any problems during the time of delivery, and that optimal care is provided for the newborn infant.

Perception of safe delivery : it refers to a woman's thinking about safe delivery and her opinions and reactions to possible problems that may occur during labour and delivery. It is measured by 14 questions. Each question can be rated on a scale from 1 to 3. A "positive perception" were received the following scores: Agree: 3 points, Not Sure: 2 points, and Disagree: 1 point. A "negative perception" were scored in the reverse manner. The total score varies from 14 to 42 points. The perceptions of safe delivery can then be classified into two groups according to the median score. A positive perception is > the median score, while a negative perception is ≤ median score.

Married women of reproductive age: it refers to married women between 20 and 49 years of age who are presently living with their spouse.

Age of respondents: it refers to a woman's age, in complete years [according to her last birthday], at the time of the interview. According to the Lao Reproductive Health Survey 2005 the age of respondents are classified into two sub-populations. This includes women of reproductive age who are respectively 20-34 and 35-49 years of age (5).

Education: the education level of the respondent and her husband refers to the highest formal educational level attained by these two individuals. According to the Lao education system, this can be classified into six levels. These include "no schooling", primary school, junior high school, high school, college/ university, and "other".

Occupation: it refers to the respondent's main and current job from which she earns an income. This can be classified into the following categories: "unemployed", farmer, government officer, trader, laborer or worker in private company, and "other".

Family income: it refers to the total monthly income earned by members of the family or household. This includes the following categories (4):

Low income: < 300,000 kips/month

Moderate income: 300,000 – 600,000 kips/month

High income: > 600,000 kips/month

Number of living children: the number of living children refers to the total number of children that the respondent gave birth to and who are still alive. This includes the following Three groups: No children , 1-3 children and more than three children (5).

Knowledge about safe delivery: it refers to a respondent's knowledge regarding normal childbirth ,childbirth with complications. The latter included issues such as obstructed labor, dangerous signs of childbirth, and abnormal conditions during childbirth that need to be referred to an appropriate health facility. This topic comprises 12 questions. The correct answer was given score of "1", while an incorrect answer was given a score or "0". Total scores concerning knowledge about safe delivery ranged from 0 to 12. Overall knowledge was classified into three groups. This included, "poor knowledge" (score < 60 % of total score), "moderate knowledge" (score 60-80% of total score) and "good knowledge" (score > 80% of total score) (45).

Accessibility: it refers to the ability of a woman to obtain delivery care services, at a health facility, without encountering any obstacles regardless of the time of day or the day of the week [i.e. weekdays versus weekends]. It included such issues as distance to travel from the respondent's home to the health facility, availability and convenience of transportation, and the cost of transportation:

Distance refers to the traveling distance from a respondent's home to the health facility. Distance was classified into three groups, and given the following scores. < 5 kilometers was given a score of 3, 5-10 kilometers was given a score of 2, while >10 kilometers was given a score of 1.

Transportation refers to the type of transport used to take a woman from her home to a health facility in case of an emergency. This category is divided into the 4 following groups: uses "own car" was given a score of 2, while uses "public transportation", "rented vehicle" and "other transportation" were given a score of 1.

Convenience of transportation was assessed from the respondents' opinions and classified as follows: "convenient" was given a score of 2 while "inconvenient" was given a score of 1.

Cost of transportation refers to the amount of money the respondent needs to spend to travel from her home to a health facility. It was classified as follows: "expensive" was given a score of 1, while "inexpensive" was given a score of 2. The total score varied from 4 to 9, which was further classified into two groups [i.e. easy accessibility and difficult accessibility to health facility] according to the mean score.

Source of information: it refers to various sources from which a respondent obtained information concerning safe delivery. This topics consisted of 7 questions, with a "yes" answer receiving a score of 1, while a "no" answer receiving a score of 0. The total score varied from 0 to 7. This was subsequently classified into two groups [i.e. easy to access information and difficult to access information] according to the mean score.

Husband's support: it refers to whether or not a husband pays attention to, takes care of, and/or encourages the respondent to do the following: plan for the pregnancy, discuss the number of children the couple should have, the time to have these children, how and where to seek good care for these children, and how and where to obtain information about as well as family planning services. This topics consisted of 5 questions, with a "Yes" answer receiving a score of 1, while a "No" answer receiving a score of 0. The total score varied from 0 to 5. This was then

classified into two groups (i.e. good support and poor support) according to the mean score.

1.7 Limitations of the study

This study was conducted in only one district in the greater municipality of Vientiane, the capital of Laos. Therefore the findings might not be representative of the entire Vientiane capital municipal area. In addition there were many other factors, that may influence the perceptions of safe delivery, which the study was not designed to investigate. This study was addressed several basic socio-economic factors (i.e. age, education level, occupation, income, and knowledge), as well as accessibility of health service, source of information, and support from the respondent's husband.

CHAPTER II
LITERATURE REVIEW

The following topics are reviewed to formulate the conceptual framework of this study :

2.1 Safe delivery

2.1.1 Meaning of safe delivery

A safe delivery is one where the birth attendant monitors progress to avoid prolonged obstructed labour, or other complications which can lead to haemorrhage, infection and shock in the mother and birth asphyxia and brain damage in the infant(7).

Safe delivery is promoted primary through the encouragement of all families to seek the care of skilled birth attendants for all births, because all pregnant women are at risk to life threatening complications, many of which are preventable and predictable. Frontline providers are trained and supervised to provide personal support, good surveillance (including the use of a partograph) to identify potential complications, a clean environment, avoidance of unnecessary and potentially dangerous practices and active management of the third stage of labor. Immediate care of the newborn includes assistance with initiation of breathing, warming, resuscitation and care in the event of birth asphyxia, hygienic cord care, eye care, immediate breastfeeding and referral to higher level care if necessary (8).

2.1.2 Strategies of Making Pregnancy Safer

The World Health Organization/Western Pacific Regional Organization (WHO/WPRO) developed a Strategic Plan on Making Pregnancy Safer (2006-2010) to

reduce maternal mortality in countries that have high levels of maternal deaths. It is important to motivate government commitment, both politically and financially, on making pregnancy safer and to ensure skilled care at every birth within the context of care. The integrated management of pregnancy and childbirth is a strategic and systematic way to improve maternal, perinatal and newborn health. The Strategic Plan on Making Pregnancy Safer emphasizes the following (9):

1. Promote government commitment, politically and financially, to reduce maternal mortality,

2. Provide support to countries and areas for dissemination, adaptation and implementation of evidence-based standards and guidelines for effective maternal and neonatal care,

3. Provide support to countries and areas for training of skilled birth attendants to provide a continuum care for mothers and newborns,

4. Empower the individual, family and communities to increase their awareness of the importance of maternal and neonatal health,

5. Provide support to improve monitoring and evaluation of maternal and newborn health, and

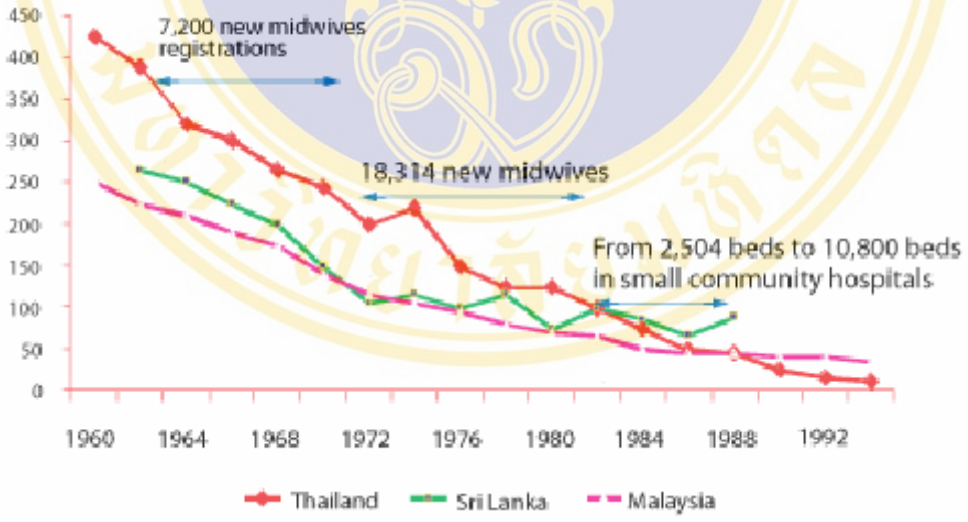
6. Strengthen partnerships for suitable “making pregnancy safer” programme in countries and areas of the region

2.1.3 Maternal mortality and safe delivery

The International Conference of Population and Development (ICPD) 1994, the Fourth World Conference on Women in Beijing 1995, and the Millennium Development Goals 2000 all recognized Safe Motherhood as an essential part of development. The latter framework for development established target goals of reducing maternal mortality ratios by 75 % by 2015, and for having 90% of all births assisted by skilled birth-attendants (SBAs) (10). The SBA is important at delivery to ensure that women have access to emergency obstetrics care if and when the need Arise (11). Based on the study of Graham W. et al. 2001, SBAs could reduced maternal mortality by 13% to 33 % (12).

The definition of a skilled birth attendant is “an accredited health professional such as a midwife, doctor or nurse who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns” (13).

Increased accessibility to skilled birth care could reduce the risk of maternal mortality. In the early 20th century industrialized countries allowed professional midwives to provide care at childbirth, and this intervention reduced the maternal mortality ratio in half. After the Second World War accessibility to health facilities improved, and maternal mortality further declined. With an increasing number of newly trained midwives maternal mortality declined to relatively low levels in Thailand, Sri Lanka and Malaysia. Thailand has been able to reduce its MMR from 400 to 50 per 100,000 live births (see Figure 2) (14).



Source: Van Lerberghe, Da Brouwere V. Safe motherhood strategies. WHO 2005.

Figure 2 Maternal mortality and skilled attendants in Malaysia, Sri Lanka and Thailand.

Access to skilled birth attendants (SBAs) and functional health systems across the region can prevent tens of thousands of deaths every year. In the least developed countries more than 90% of women deliver at home without assistance from skilled birth attendants. A priority of the WHO Making Pregnancy Safer strategy is to ensure that women have access to skilled birth attendants (9).

The skills required by a skilled birth attendant depend on the level of community care and/or referral. The list below summarizes the delivery skills that are required at community level, whether the delivery occurs in the health centre or at home. These include several emergency obstetric and neonatal care functions(14):

1. Safely conduct a normal delivery using aseptic techniques,
2. Use a partograph to recognize obstructed labour,
3. Active management of the third stage of labour,
4. Provide immediate care of the newborn including resuscitation,
5. Initial management of post partum haemorrhage through use of parental oxytocics and abdominal massage,
6. Initial management of pre-eclampsia and eclampsia through use of Magnesium sulphate,
7. Recognize and manage post partum infection through the use of parenteral antibiotics,
8. Know how and when to refer women to the next level of care and stabilize them for their journey,

And in a facility, all of the above plus

9. Repair of tears,
10. Manual removal of placenta,
11. Perform assisted vaginal delivery through the use of a vacuum extractor, and
12. Manage incomplete abortion with manual vacuum aspirator

Emergency Obstetric Neonatal Care (EmONC) is a set of functions that are internationally recognized as being requisite for saving the lives of mothers and

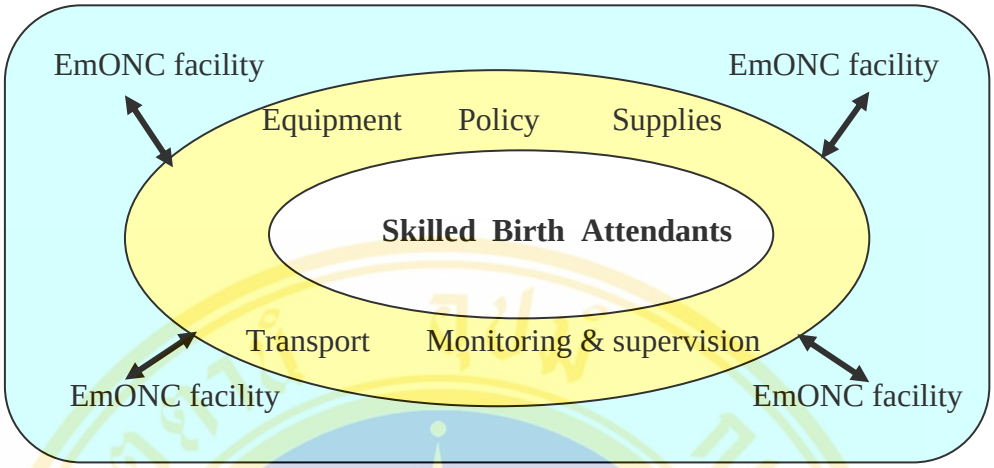
babies in childbirth emergencies. The level of EmONC depends upon the facility (14). There are 2 levels of EmONC:

1. **Basic EmONC:**
   - Parenteral (IV/IM) antibiotics,
   - Parenteral Oxytocics,
   - Parenteral anticonvulsants for pre-eclampsia/eclampsia (magnesium sulphate recommended),
   - Neonatal resuscitation,
   - Manual removal of placenta,
   - Removal of retained products (MVA preferred),
   - Assisted vaginal delivery (vacuum aspiration or forceps),

2. **Comprehensive EmONC: includes all of the above, plus the following:**
   - Blood transfusion,
   - Caesarean section.

The three inter-connected elements that comprise the fundamental international standard for saving mothers' and babies' lives are as follows: the SBA knows how to do the right things (knowledge) in the right way (skills), an enabling environment means that both the policies and the work place conditions support the provision of the necessary care, and referral means that there is a reliable system in place for transport to a higher and suitable level of care

Figure 3 shows the close linkage between SBAs, the facility (including equipment, supplies, policy support, transportation, monitoring) and the referral system for sending complication cases to save the life of both mother and baby. See Figure 3 (15).



Source: Skilled Birth Attendant assessment in Lao PDR .

Figure 3 Skilled Birth Attendance: Provider and Supportive Environment(16)

By using epidemiological evidence, the UNFPA organization in South East Asia estimated that SBAs could reduce maternal mortalities. There is a relationship between maternal mortality and the proportion of deliveries attended by SBAs. Where there is a high proportion of deliveries attended by SBAs the maternal mortality ratio is low. Figure 4 shows the relationship between the Maternal Mortality Ratio (MMR) and SBA among countries in South East Asia (2).

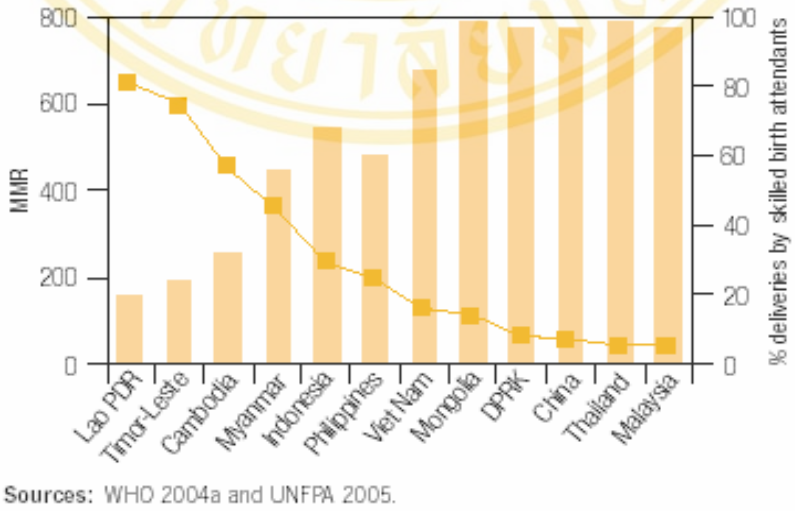


Figure 4 Maternal mortality ratios and the percentage of births attended by SBAs

2.2 Perception

2.2.1 Meaning of perception

Perception is the process by which organisms interpret and organize sensation to produce a meaningful experience of the word. Sensation usually refers to the immediate, relatively unprocessed result of stimulation of sensory receptors in the eyes, ears, nose, tongue, or skin. Perception, on the other hand, better describes one's ultimate experience of the word and typically involves further processing of sensory input. In practice, sensation and perception are virtually impossible to separate, because they are part of one continuous process (17).

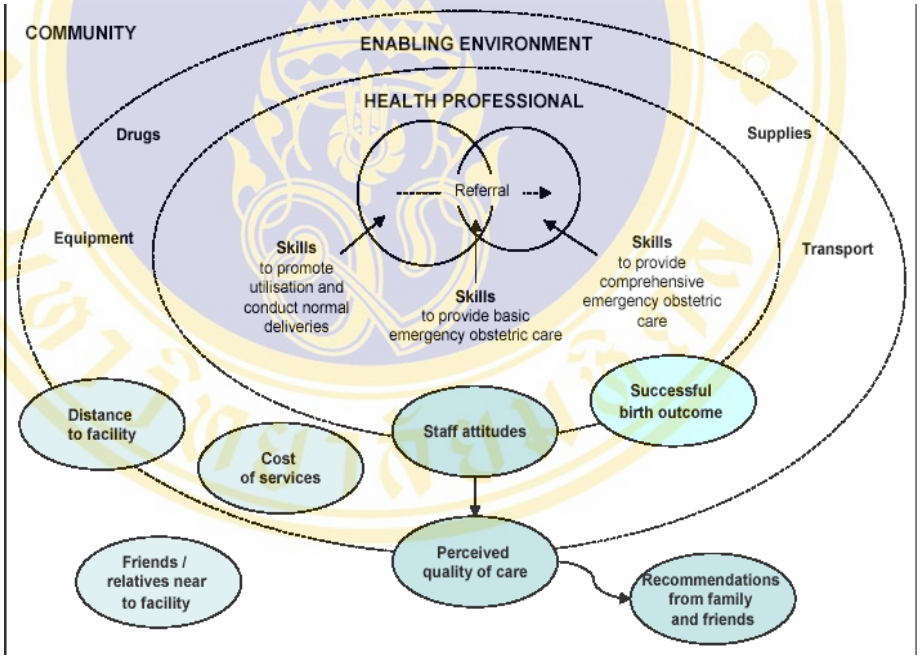
2.2.2 Perceptions of safe delivery

The study of Hasan J and Nisar N, on women's perception regarding obstetric complications and care in a poor fishing community, found that their poor knowledge of common and serious pregnancy related complications was based on their perceptions related to danger signs. For example only 13 % of women perceived convulsions as a danger signal for a possible complication. Similarly only 23 % of women thought that obstructed labour was a danger signal, while only 39% of women thought that bleeding could lead to a complication (18).

Another study on the perception of bleeding as a danger sign during pregnancy, childbirth and post partum period was conducted in Nepal. Here it was found that mother-in-laws and other people in the community thought that bleeding after childbirth was normal for women giving birth (19).

Women's perception and experience of care was influenced by the place of delivery, as well as with the satisfaction of care, and the expectation of care. The study on women's perception and experience of care indicated that attitudes of service providers were very important to women. This factor influenced acceptability and utilization of services. In addition a successful labour outcome was influenced by non-medical factors such as cost, perceived quality of care, and proximity of service (20).

Proctor S. studied determine quality of Maternal & Child Health Care in the United Kingdom, focusing on the needs of consumers. The findings illustrated that the experience of a positive birth outcome seems to give many women more confidence to be critical of service's feature. Their satisfaction was an appropriate term to describe their emotional response to this experience. The consensus was that when things turned out fine with the birth outcome, patients were satisfied with the service. In contrast when things did not turn out well with the birth outcome, clients were not satisfied with the services and did not use this particular service in the future (21). The caregiver's attitude is an important factor that influences acceptability to and satisfaction with services. The acceptability to and satisfaction with service reflected the quality of the service (22). See Figure 5.



Source : Ambruoso L et al. in 2005 5 :140(20) .

Figure 5 Skill Attendance For Everyone (SAFE) Framework Model:

2.2.3 Effect of perception of safe delivery on practices

Many studies found that there were direct relationships between perception and practice. The study of Adams V and Miller S on safe delivery in Tibet found that women in rural areas have negative perceptions and misunderstand the importance of

safe delivery. Women did not feel it was good to use the hospital (or local clinics) for delivery because they were afraid of the health workers, doctors, or nurses. They could not communicate well with them; or they were afraid of the kind of care they would receive at the hospital or clinic. Therefore they did not go to health unit (23).

A study of patients' perception of obstetric practices in Calabar, Nigeria found a close correlation between satisfaction with the staff and facility, and overall satisfaction with the service. There 97.2% of mothers indicated that they were satisfied with the care they received, of which 81 % of these women were satisfied with the staff, 60.7 % with the quality of services, 43.6% with sanitation, and 33.6% with other amenities found at the hospital. On the other hand 13.3% of women wanted pain relief and 34.7% did not appreciate the shaving of pubic hair and felt episiotomy was not necessary for safe delivery (24).

Kabir MA. studying safe delivery practices in rural Bangladesh found that local culture influenced the perceptions of women to safe delivery. Almost all women (94%) delivered at home. Only 4% delivered at government health facilities and 2% delivered at private clinics. Untrained birth attendants, relatives, and neighbors assisted with the majority of deliveries (67%). The remaining deliveries were assisted by the following categories: health professionals (9%), trained traditional birth attendants (13%), others (10%), no assistance (1%) (25).

According to the study some beliefs regarding childbirth practices were inappropriate. Women in some areas, for example, believed that obstructed labour was a punishment given by evil spirits or witches if a husband or wife had an extra marital affair. Thus the couple did not seek any care if this development occurred during delivery. These common beliefs can obviously cause serious illness and/or death. These types of problems illustrated that the family and community lacked knowledge regarding the cause and management of delivery related complications. (26).

2.2.4 Perception measurement

Ladfors L et al. measured the attitude and knowledge of Swedish women concerning antenatal, delivery and postpartum care by using a grade scale of from 1 to 7. All questions were structured in their character. Regarding opinions about delivery, 4% of both parous and nulliparous women were interested in having a home delivery. Regarding anxiety for the next delivery, there were more parous (33%) than nulliparous (12%) women who expressed no anxiety. Most parous women (79%) reported that they would like to have a planned visit with a delivery ward midwife before the next delivery. Most parous (84%) and nulliparous (79%) women reported that they felt safe if their partner was present in the delivery room (27).

Tarkka MT and Paunonen Mc studied social support and its impact on mothers' experiences of childbirth. The study determined the available social support mothers received during pregnancy and childbirth. The results showed that social support is a major source of emotional for support women. During labour 85 % of the emotional support mothers received was provided by the midwife. There was significant association between the emotional support provided by midwife and the mother 's positive experience of childbirth (28).

Waldenstrom U et al. studied the prevalence and risk factors of negative birth experiences. A woman's dissatisfaction with the experience of labour and childbirth may effect her emotional well being and willingness to have another baby. The results indicated that the changing attitude from positive experience, during a previous event, to a less positive feeling was associated with a difficult childbirth. This included painful labour and caesarean section, dissatisfaction with intrapartum care, and psychological problems such as single marital status, depressive symptoms, and worry about the birth during the early pregnancy period. Changing from a negative to a less negative experience was associated with less worry about the birth in early pregnancy, and a more positive experience of support during the infant's birth (29).

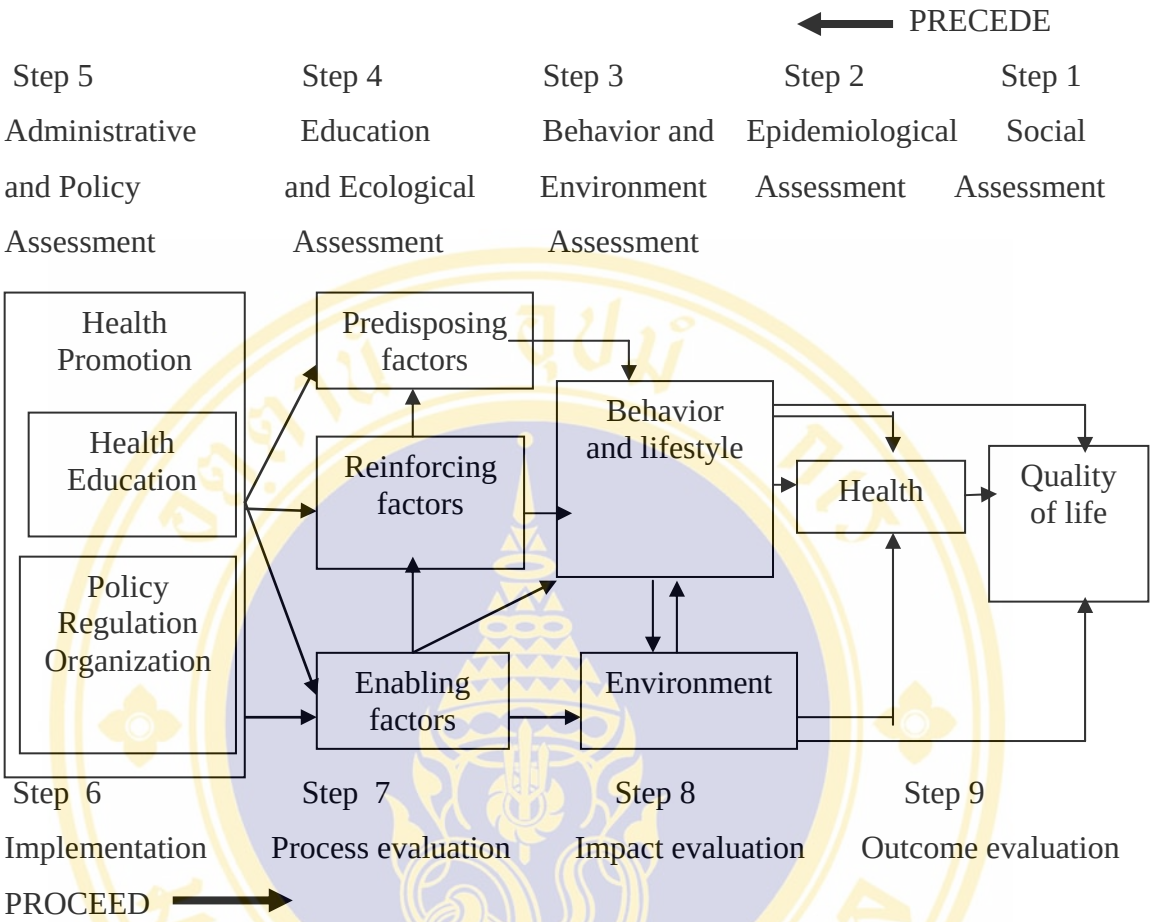
2.3 Theory for development of conceptual framework

The PRECEDE-PROCEED model is a tool for evaluating the health of people and the quality of life needed in planning, implementation and evaluation of a health promotion programme. PRECEDE, an acronym that stands for Predisposing, Reinforcing, Enabling and small Construct in Education/Environment Diagnosis and Evaluation guidelines, is a diagnostic planning process for a health promotion programme. PROCEED, an acronym that stands for Policy, Regulatory and Organizational construct in Educational and Environment guidelines, is used for the implementation, evaluation, and outcome of the programme (30). See Figure 6.

The PRECEDE model, illustrated in Figure 6, contains the following five-step assessment:

1. Step Assessment #1 identifies the needs of a population or communities, and quality of life or social problems,
2. Step Assessment #2 determines health problems and needs,
3. Step Assessment #3 analyzes behavioral and environmental determinants of health issues,
4. Step Assessment # 4 identifies all predisposing, enabling and reinforcing factors,
5. Step Assessment #5 determines the strategies and plans for intervention, such as which health promotions and health education to use, and which related resources and policies can facilitate interventions that will encourage behavioral and environmental change

The PROCEED model contains four steps. Step Assessment Six is implementation, while Step Assessment # Seven and Nine deals with the evaluation of the process, and overall impact and outcome evaluation of the project. Step Assessment Eight measures the programme's effectiveness in terms of changing predisposing, reinforcing, and enabling factors that influence behavior and environmental changes and that contribute to the quality of life of an outcome.



Source: Health and Health Education. Theory research and practice 3rd ed. Karen Glanz, p. 424

Figure 6 The PRECEDE-PROCEED Planning Model for Health Promotion and Evaluation (30).

The PROCEDE Model is being used as a guideline to construct a conceptual framework of this study. According to the model, this is study focuses on Step 3-Behavior and Environment Assessment of a safe delivery, and Step 4-Education and Ecological Assessment.

Predisposing factors include knowledge, income of family, and educational level; basic factors that can persuade women to give birth in a safe environment.

Enabling factors concerns the accessibility of married women of reproductive age (MWRA) to health
services. It includes distance, transportation, and cost of service that will affect the utilization of safe delivery services.

Reinforcing factors deal with safe delivery information received from various sources that will motivate MWRA to have a positive perception of safe delivery and then to accept the service.

2.4 Factors related to perception of safe delivery

2.4.1 Socio demographic and economic factors

Age: there are many studies that found that socio-demographic and economic factors could serve as barriers to the utilization of safe delivery service among women of reproductive age. The Lao Reproductive Health Survey (LRHS) in 2005 found that 85 % of respondents gave birth at home, while only 15 % delivered at health facilities. Of the MWRA who delivered at health facilities, it was more common to find women older than 20 years of age than those under 20 years of age. (5).

The study on safe delivery practices in rural Bangladesh found that 94% of respondents gave birth at home, and 67 % were assisted by untrained Traditional Birth Attendants (TBAs). Health professionals assisted in only 9% of all deliveries. Age had a significant effect with respect to safe delivery practices. Women 20-34 years of age were two times more likely to have medical trained personnel (MTP) assisting in their delivery than women < 20 years of age or women >34 years or age (25).

The study of Nigussie M et al. in North Gondar, Ethiopia, showed that most women preferred to have their delivery at home (76.4 %), while only 13.5% preferred to delivery at health facilities. Women also tended to have their first pregnancy at a very young age, with 78.2% becoming mothers before 20 years of age (31).

Education: low educational levels for both respondents and their spouse had a direct effect on accessibility to safe delivery services for women encountering obstetric complications. The study on safe delivery practices in rural Bangladesh indicated that women with a high educational level have health personnel assist with their deliveries 29 times more than women who with no formal education(25). The educational level of husbands also had a direct influence on safe delivery practices in rural settings. The result of this study clearly indicated that women married to a husband with a high educational level were 7 times more likely to have health professionals assisting with their delivery (26).

In the study on inequality in the utilization of safe delivery services in Bangladesh, with respect to barriers in reducing maternal mortality, Salam A. et al. showed that the education level of women also had an influence on utilization of safe delivery services. Women with high education were much more likely to deliver in health facilities (40%) as compared to women with no schooling (2.8%). With respect to women classified as illiterate, in rural areas only 2.3% delivered in health facilities while this number slightly increased to 10.4% in urban areas. Women who had a high education were more likely to deliver in a health facility. In urban areas 70% of this cohort delivered in a health facility, while in rural areas this number was 28.6% (32).

Income: economic status also influences the access to safe delivery service. The assessment of safe delivery service utilization among women in Ethiopia by Nigussie M. et al. found that women with low income less than 100 Bir gave birth at health facilities less than women having income of ≥ 500 Bir (31).

The study of Anwar et al. focusing on inequity in maternal health care service in Bangladesh indicated an imbalance between poor and rich women with respect to utilizing skilled birth attendants during labour and delivery. Only 15.6% of mothers from the poorest quintile households used skilled birth attendants, whereas 63.3% of the mothers from the richest quintile households used skilled birth attendants. Only 3.3% of women from poorest quintile households accessed caesarean section services, whereas 28.4% of mothers from the richest quintile did so (33).

The study on utilization of maternal health service in Vietnam by Sepheri A et al. found that access to obstetric service was 42 % for poor women and 97% for the richest women (34). The Multi Indicator Cluster Survey (MICS) in the Lao PDR in 2006 also found that the percentage of deliveries assisted by skilled birth attendants is strongly correlated to the wealth quintile of mothers, ranging from 3.3 % for the poorest mothers quintile to 81.8 % for the richest mothers quintile (35). The studies above illustrate a disparity of utilization of delivery care services between poor and rich women in developing counties.

Number of children: birth order is another factor that affects the safe delivery service utilization of mothers. The study from Ethiopia found that the birth order affected safe delivery services. The probability of giving birth at a health facility decreased in grand multigravida mothers more than for the mothers who got pregnant 4 times or less. The results illustrated that mothers tend to seek modern obstetric care for their first pregnancy than for subsequent pregnancies. However many studies reported that grand multigravida and primigravida were at high risk of maternal mortality and disability according to poor delivery outcomes (36).

2.4.2 Knowledge about safe delivery

Women's knowledge on obstetric complications influences the utilization of safe delivery service. A study on knowledge and practice of women regarding complications of pregnancy and childbirth in rural Bangladesh by Khanum PA et al. showed that 33.% of women had low knowledge regarding obstetric complications (prolonged labour, retained placenta, mal presentation during delivery, severe bleeding and convulsion after delivery). The consequence of poor knowledge contributed to a delay in seeking appropriate care (37).

Survey on Safe Motherhood Promotion in Narsingdi district, Bangladesh in 2006, found that the respondents were knowledgeable about post partum haemorrhage and the place for management. They were quite aware of important delivery complications requiring immediate therapeutic attention (e.g. delayed labor

(75%), mal presentation (35%), hand or leg prolapse (32%), convulsion (18%) and the absence of pain or uterus contraction (15 %) (38).

2.4.3 Accessibility to safe delivery

The Safe Motherhood Programme (SMP) is designed to reduce the high number of maternal deaths and illness resulting from complications of pregnancy and childbirth. Most maternal mortalities result from hemorrhage, sepsis, obstructed labour, hypertension, and complications of unsafe abortion. SMP seeks to address these direct medical causes and undertakes direct measures to ensure that women have access to comprehensive reproductive health services (39).

Even when providing the best antenatal screening, any delivery can become complicated. This requires emergency intervention. Therefore skilled assistance is essential to delivery care. In absence of midwives or nurses, traditional birth attendants (TBAs) who usually perform home deliveries should be trained to identify complications and provide immediate first aid, as well as to know when and where to refer for additional care. It is critical to have a well-coordinated system to identify complications and ensure their management with immediate first aid or referral (40).

The study on having a "safe delivery" in Tibet by Adams V and Miller S found that for rural women it was sometimes impossible to use clinics or hospitals because they were located too far away from the homes of the clients. Women mostly traveled by foot, horse, tractor, car or truck. These journeys were both arduous and sometimes quite expensive (23).

The study by Blum L S, et al. found similar problems. Most respondents had difficulty accessing delivery services at health facilities. They complained that transportation was extremely difficult, especially in the dry season because they had to come by foot or rickshaw due to poor roads; whereas in the rainy season it was easy to access health facilities by boat (41).

2.2.4 Sources of safe delivery information

The Lao Reproductive Health Survey in 2005 indicated that the majorityof respondents in rural area had limited access to obstetric complications information. Therefore they believed that giving birth at health facility was not necessary (5).

Kabir MA's study showed that one-third (33.2%) of respondents owned radios and 20% owned televisions. Very few respondents (13%) read newspapers and magazines. Listening to radio (44%) and watching television (47%) were sources of information. Regarding exposure to health care centers over half (>50%) of the women visited a satellite clinic before their last delivery (25).

The study of Nigussie M et al. showed that the proportion of rural women giving birth at health facilities was lower than for women in urban centers. The reason may be that urban women tend to have better access to health information and mass media (e.g. radio), and that this may affect their preference for institution-based delivery (31).

2.4.5 Support from husband

The International Conference on Population and Development (ICPD) Programme of Action urges governments to increase the participation of men in all aspects of reproductive health and to encourage men to share responsibility in matters related to family planning, parenting, gender equality and the empowerment of women. Most countries responding to the inquiry indicated an increased awareness of the need to involve men in reproductive health programmes. Many reported having started programmes specifically directed at male involvement; with some of them being quite innovative (42).

The study by Nejad V M regarding couples' attitudes for the husband's presence in the delivery room during childbirth illustrated that 88.4 % of women and 76.9 men had positive attitudes to allow husbands to be present in the delivery room (43).

The study on the experience of Middle Eastern men involving mother and childcare and fatherhood in Sweden, by Ny P et al, showed that most men had very positive attitudes at being invited to participate in information gathering about pregnant woman and learning how to better improve the women's situation during pregnancy and how to take care of babies and young children (44).

Summary of previous related study

Safe delivery is a crucial factor for reducing maternal and prenatal morbidity and mortality. Perception of women toward safe delivery is an important factor contributing to proper practice during delivery. The perception is affected by many factors such as an individual's age, education, knowledge of safe delivery, and accessibility to information and services.

In the Lao PDR many surveys have been conducted exploring the quality of mother and child health services. However there are few studies concerning the knowledge and perception of safe delivery among women of reproductive age. This study is the first study of its kind in Vientiane capital, Lao PDR. The aim of this study focuses on women's knowledge and perception of safe delivery. The findings will hopefully discover the reasons why women do not give birth at health facilities. The results of this study will enhance the capacity of policy makers, senior health planners, and project managers to develop realistic and effective plans dealing with mother and child health promotion as well as help develop guidelines for improved mother and child health services.

CHAPTER III
RESEARCH METHODOLOGY

3.1 Study design

This study was a cross - sectional study that aimed to explore the factors associated with the perceptions of safe delivery among married women of reproductive age (MWRA).

3.2 Study population

The study population consisted of married women 20 – 49 years of age who either experienced or did not experience a delivery, and who permanently lived in their present village in Parkgneum district for at least one year.

3.3 Place of study

The study was conducted in Parkgneum District, which is 1 of 9 districts that comprise the greater Vientiane capital area. The district centre is located 60 kilometers from the nation's capital. It has a land area of 560 square kms. The district contains 45,684 people, of which 8,693 are married women of reproductive age. Pak gneum is made up of 6 catchment areas containing 53 villages and 8,144 households.

3.4 Sample size:

The sample size is estimated by using the following formula:

$$n = \frac{NZ^{2}_{\alpha/2}P(1-P)}{d^{2}(N-1)+Z^{2}_{\alpha/2}P(1-P)}$$

n = Sample size

N = Total number of married women of reproductive age living in Park gneum district = 8,639

Z = The level of statistical significance in this study is set at a 95% confidence interval =1.96

d = Allowance for relative error = 0.08

p = Prevalence rate of home delivery in Parkgneum district = 0.6 (5)

$$n = \frac{8.693(1.96)^{2}(0.6)(0.4)}{(0.08)^{2}(8.693-1)+(1.96)^{2}(0.6)(0.4)} = 142$$

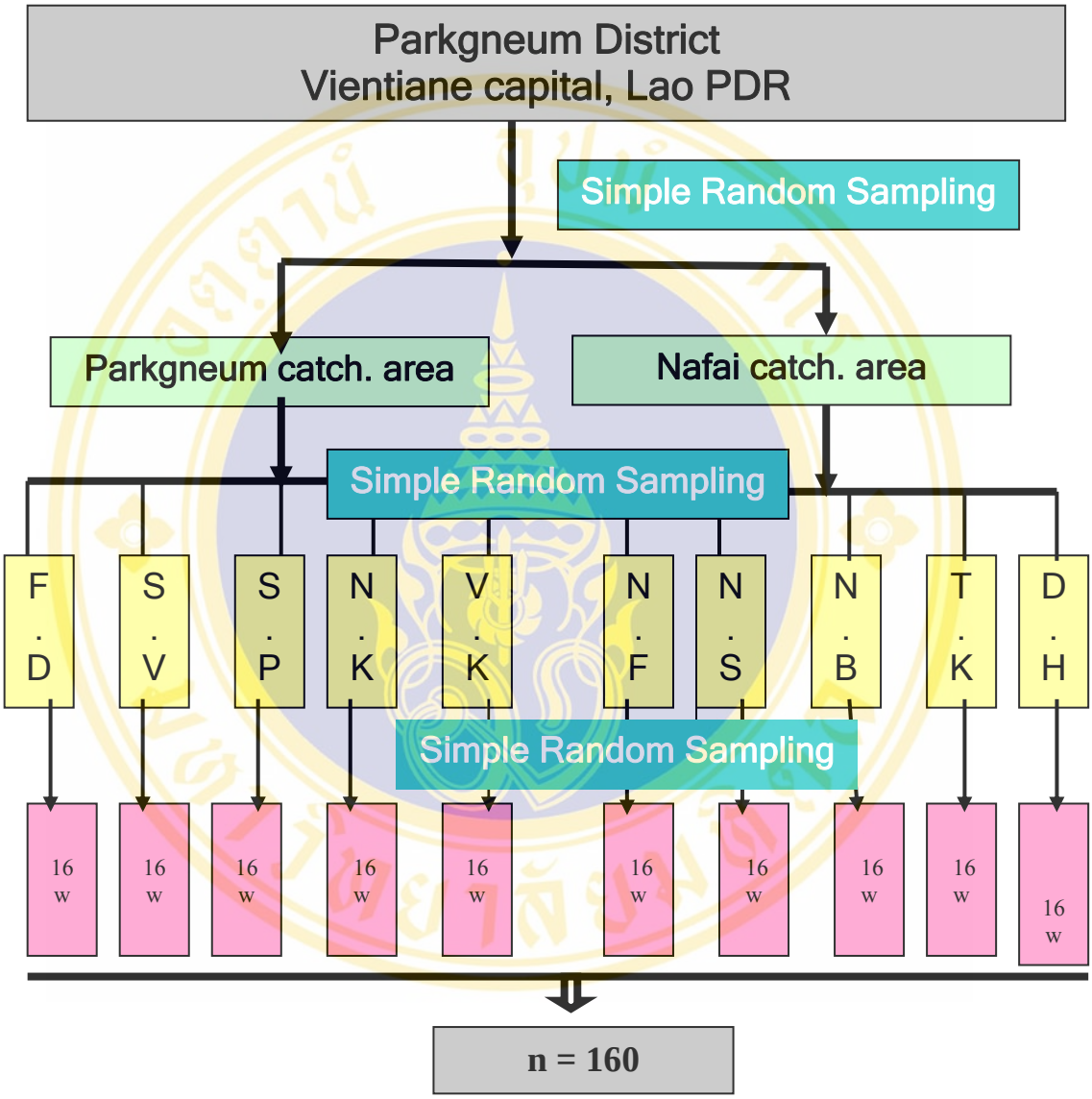
$$n = 142 + 10\,\% \approx 157$$

According to the above calculation, it was necessary to include at least 142 women to serve as the sample population in order to properly analyze the data. In this study an additional 10% was added to the sample size to prevent miscalculations that could possibly arise due to an inadequate sample size population. Thus a total of women 160 married women of reproductive age were interviewed as part of this study.

3.5 Sampling technique

The study used a three-stage cluster sampling technique. The first stage was to randomly select 2 catchment areas (i.e. Nafai and Parkgneum) from the 6 catchment areas (i.e. Dongkaleum, Bane Dol, Nafai, Nasone, Sinnsai and Parkgneum) that comprise Parkgneum District. The second stage was to randomly select 5 villages from each of the 2 catchment areas. Thus the study intervention area consisted of the following 10 villages: Bane Nafai, Nasa, Nongbouathong, Thangkhong, Donehai, Veunkhean, Sompraseuth, Somsavath, Fang Daeng and Nonkeyth. The third stage was to randomly select 16 married women of reproductive age, from a name list of

household members in each of the 10 villages, who were to be interviewed as the study participants.



Remarks:

F.D: Fang Daeng village; S.V : Somsavath; S.P:Sompaseuth; NK: Nongkheyth; V.K: Veunkhaen; NF: Nafai, NS: Nasa; NB; Nongbouathong, TK: Thangkhong; DH: Donhai.

Figure 7 Three stage cluster sampling methodology

3.6 Research instrument for data collection

3.6.1. Research instruments

A structured questionnaire was developed for data collection. Most of questions were close-ended questions, while a few were open-ended questions. The questionnaire content was organized into the following 4 parts:

Part I Pre-disposing factors:

1. Socio-demographic and economic factors: this part of the questionnaire consisted of 8 questions that dealt with the socio-demographic and economic background of married women of reproductive age. It included age, educational level, occupation, family income, and the number of living children.

2. Knowledge on safe delivery: this part of the questionnaire consisted of 12 questions focusing on women's knowledge of safe delivery. It included childbirth, complications, instruments used in delivery, skilled birth attendants, and social support provided during delivery.

Part II Enabling factors:

This part of the questionnaire consisted of 4 questions that asked the respondents about accessibility to safe delivery services. This included the distance from the client's home to a health facility, the type of transportation used, and the cost and convenience of transportation.

Part III Reinforcing factors:

1. Sources of information about safe delivery: This part of the questionnaire consisted of 7 questions that identified the sources of information that women had access to regarding safe delivery. This included information provided by health personnel, friends, family members/husbands, radio, television announcements, printed materials and newspapers.

2. Husband's support: this part of the questionnaire consisted of 5 questions to determine whether or not women received any support and encouragement from their husbands with respect to obtaining safe delivery services.

Part IV. Perceptions of safe delivery among married women of reproductive age

This part of the questionnaire consisted of 14 questions. Each question had a rating scale from 1 to 3. Positive perceptions received the following scores: "Agree" was given a score of 3, "Not sure" was given a score of 2, and "Disagree" was given a score of 1. Negative perceptions received the following scores: "Agree" was given a score of 1, "Not sure" was given a score of 2, and "Disagree" was given a score of 3. Total scores varied from 14 to 42. The perceptions of safe delivery were classified into two groups according to the overall median score. A positive perception was obtained if the total score was greater than the median score, while a negative perception was obtained if the total score was equal to or less than the median score.

3.6.2. Pre-testing of the questionnaires

Before collecting data the questionnaire was pre-tested on a group of 30 married women of reproductive age living in Pakgneum district. This pre-testing exercise was conducted after the questionnaire was translated into Lao. Data reliability was measured by using Kuder-Richardson Formula 20 (KR20) for the knowledge part, and Cronbach's Alpha for the perception part. The result was 0.89 on Kuder-Richardson and 0.60 on Cronbach's Alpha.

3.7 Data collection process

The data collected for this study came from interviewing married women of reproductive age. The entire data collection process, however, included the following steps:

1. Identifying and contacting the study site to obtain permission to conduct the study.

2. Submitting an "ethics form" to the Mahidol University Ethic Committee to request permission to conduct the proposed study. When permission was granted, the researcher was able to start the actual data collection process.

3. Translating the questionnaire into Lao and conducting a pre-test on a similar group of married women of reproductive age living in villages in Pakgneum district. The pre-test was conducted, among 30 MWRA, to measure the validity and reliability of the questionnaire.

4. Conducting an one-day training course on data collection methodology for four research assistants.

5. Randomly selecting a sample of MWRA, from household name lists, and then visiting each house to meet the prospective participants and to conduct the interview session.

6. Before interviewing each participant the investigator or research assistant explained the purpose and process of the study, as well as assured the participants that the information they provided would be confidential.

7. A written informed consent form was given to each participant to read before making any decision whether or not to participate in this study.

8. Those individuals agreeing to participate in the study were then asked to sign a formal written consent form.

9. The investigator or research assistant then proceeded to interview each respondent. It took approximately 40 minutes to complete the questionnaire form (see the attached questionnaire form). If participants did not understand a question, the investigator explained its meaning. If participants felt uncomfortable answering any particular question, they could simple leave that question "blank".

10. The questionnaire consisted of the following parts:

Part I: Predisposing factors:

a) Socio-demographic and economic characteristics: this part of the questionnaire consisted of 8 questions that dealt with the socio- demographic and economic characteristics of the participants. It included age, educational level, occupation, number of living children and family income

b) Knowledge on safe delivery: this part consisted of 12 questions about knowledge of safe delivery.

Part II: Enabling factors:

This part consisted of 5 questions about accessibility to safe delivery services:

Distance: the respondents were asked a question about the distance they needed to travel from their home to a health facility.

Transportation type: the respondents were asked a question about the type of transportation they used to travel to a health facility in case of an emergency.

Convenience: the respondents were asked a question about the convenience of traveling from their home to a health facility.

Cost of transportation: the respondents were asked a question about the cost of traveling from their home to a health facility.

Part III: Reinforcing factors:

a) Source of information about safe delivery: this part consisted of 7 questions concerning the sources of information that women had access to with respect to safe delivery. This included health personnel, friends, family members/husbands, radio/television announcements, and printed materials.

b) Husband support: this part consisted of 5 questions focusing on the type of support and encouragement husbands provided to their wives during pregnancy and at the time of the delivery. It also tried to assess whether or not

husbands discussed issues concerning the number and timing of children for their family, or if they provided any support and encouragement to their wives to obtain information about or to obtain family planning services. The questionnaire also tried to determine if husbands in general provided support for their wives to seek good health care when the latter were ill.

Part IV: Perceptions of safe delivery among MWRA:

This part consisted of 14 questions about safe delivery, trying to assess the respondents' reaction to potential problems that might occur during labour and delivery.

11.The respondents were assured that their responses would be confidential, and that no associations could be made between any participant and the data enumerated on their respective completed questionnaire forms. The respondents confirmed that they wished to participate in the study and were assured that they had right to withdraw from the study at any time.

12. After completing each data collection exercise, in a particular village, the interviewer, and then the investigator, checked each questionnaire for completeness.

13. The data collection exercise was conducted from 9-30 January 2009.

3.8 Data analysis process and statistical analysis

The data was entered by EpiData. It was cleaned, coded, and analyzed by MINITAB.

3.8.1 Data management

After the data collection exercise was completed, the data was recoded. Standardized procedures were used for data recoding and analysis. Data were entered into EpiData and then it was processed and analyzed by using Minitab software.

1. Socio-demographic and economic data including age, education, occupation, family income, and number of living children:

The age of respondents was classified into two groups: those respondents between 20 to 34 years of age were coded as 1, and those 35 to 49 years of age were coded as 2. Husband's age was classified into three groups: those between 21 to 35 years of age were coded as 1, those 36 to 50 years of age were coded as 2, and those over 50 years of age were coded as 3.

The education background of respondents was classified into four groups: women who had no formal schooling were coded as 1, those completing primary school level were coded as 2, those completing junior/high school were coded as 3, and those at the college/university level were coded as 4.

Occupation of respondents: The non farmers were coded as 1, while all others (government officers, traders, workers, and private companies) were coded as 0 to create dummy variables to perform Multiple Logistic Regression.

Family income: The family income was classified into three categories(4):

- Low income: < 300,000 kip
- Moderate income: 300,000 – 600,000 kip
- High income: > 600,000 kip

2. Knowledge about safe delivery: the correct answer was given a score of 1, while an incorrect answer was given a score of 0. The knowledge about safe delivery was divided into the following 3 categories according to the mean score. "Poor knowledge" was determined by a score of less than 60% of the total score (< 7.2), "Moderate knowledge" was determined by score of 60% - 80% of the total score (7.2 - 9.6) and "Good knowledge" was determined by a score greater than 80% of the total score (> 9.6). The total score was 12.

- Poor knowledge: < 60%
- Moderate knowledge: 60% - 80%

- Good knowledge: > 80%

3. Accessibility to safe delivery services: this component of the questionnaire consisted of distance from a respondent's home to a health facility, the type of transportation used, and the convenience and cost of transportation:

Distance: The respondents were asked a question about the traveling distance from their residence to health facilities. The distance was classified into the three following groups: less than 5 kms was given a score of 3, from 5-10 kms was given a score of 2, and more than 10 kms was given a score of 1.

Type of transportation: The respondents were asked about the type of transportation they used to travel to a health facility in case of an emergency. The answers were classified into the two following categories: "their own car" was given a score of 2, while using a "private or rented vehicle" was given a score of 1.

Convenience of transportation: The respondents were asked whether it was convenient to travel from their home to the health facility. The answer was classified into 2 categories. "Convenience" was given a score of 2, while "Inconvenience" was given a score of 1.

Cost of transportation: The respondents were asked about the amount of money they paid to travel from their home to a health facility. The answer was classified into two categories: "Expensive" was given a score of 1, while "In expensive" was given a score of 2. The total scores on accessibility to safe delivery ranged from 4 to 9. The level of accessibility was classified into "easy to access" and "difficult to access" health services according to the mean scores:

- Difficult access to safe delivery services was ≤ mean score
- Easy access to safe delivery services was > mean score

4. Sources of information: The sources of information consisted of 7 questions. If the respondent answered "Yes" she was given a score of 1, and if she answered "No" she was given a score of 0. The total score on sources of information

ranged from 0 to 7. This topic was classified into "easy access" and "difficult access" to information according to the mean score:

- Difficult access to sources of information on safe delivery was ≤ mean score
- Easy access to sources of information on safe delivery was > mean score

5. Husbands' support: This part consisted of 7 questions. If the respondent answered "Yes" she was given a score of 1, and if she answered "No" she was given a score of 0. The total score on husbands' support ranged from 0 to 7. This topic was classified into two groups: "poor support" and "good support".

- Poor support was ≤ mean score
- Good support was > mean score

6. Perceptions of safe delivery: Each question had a rating scale from 1 to 3. A positive perception received the following scores: "Agree" was given a score of 3, "Not sure" was given a score of 2, and "Disagree" was given a score of 1. A negative perception was scored in the reverse manner. The total score for perceptions of safe delivery ranged from 14 to 42. This topic was classified into the following 2 categories of perceptions:

- Negative perception was ≤ median score
- Positive perception was > median score

As the variable scale is rating and the data were not normally distributed, median was used as the cut- off point.

3.8.2. Statistical methods

3.8.2.1. Descriptive statistics analysis:

Descriptive statistical methods such as Frequency, Percentage, Mean, Median and Standard Deviation were used to describe the respondents' socio-economic characteristics, knowledge about safe delivery, accessibility to health

services, sources of information, support from husband, and the perceptions of safe delivery among MWRA.

3.8.2.2. Inferential statistics:

Chi-square test was used to identify the relationship between perception on safe delivery and each independent variable (socio-demographic and economic factors, knowledge, accessibility to safe delivery, sources of information, and support from husband).

Multiple logistic regression was used to determine the association between dependent variables and study factors simultaneously. Forward (Wald) selected for significant predictors was used together with the theoretical judgment of the researcher.

The significance level was at P-value < 0.05.

CHAPTER IV
RESULTS

This cross-sectional study was conducted to determine the perceptions of safe delivery among married women of reproductive age in Parkgneum district in the Vientiane capital area of the Lao Peoples Democratic Republic (Lao PDR). The study population comprised married women between 20 and 49 years of age. The data were collected by four trained health staff; two health staff from the Mother and Child Health Center, one staff member from the Mother and Child Health section of the Vientiane capital Health Office, and one staff member from the gynecology - obstetrics ward at the Parkgneum district hospital. One hundred and sixty married women, between 20 and 49 years of age, participated in this study after receiving information about the purpose of the study, reading a participant's information sheet, and signing an informed consent form.

The results were tabulated and presented according to frequency and percentage. The relationship between the independent variables and perceptions of safe delivery among married women of reproductive age were statistically determined by using Chi-square test and Multi Logistic Regression analysis with the level of significance at alpha less than 0.05. The results of this study were presented in the 6 following sections:

Part I: The respondents' socio-demographic and economic characteristics, and their knowledge about safe delivery.

Part II: The accessibility to safe delivery services among married women of reproductive age.

Part III: The respondents' accessibility to sources of information about safe delivery as well as the level of support provided by their husbands.

Part IV: The respondents' perceptions of safe delivery.

Part V: The association between predisposing, enabling, and reinforcing

factors and perceptions of safe delivery among married women of reproductive age.

Part VI: The analysis of factors that could predict perceptions about safe delivery among married women of reproductive age.

4.1 Part I The respondents' socio-demographic and economic characteristics, and their knowledge about safe delivery

4.1.1 Socio-demographic and economic characteristics

Table 1 illustrated that 53.1 % of the respondents were between 20 to 34 years old while 47 % were between 35 to 49 years of age.

The education level of the participants was generally low. Approximately 67% of them had only a primary school education, while 18.1% completed junior high school and 2.5% had a high school education. The remaining 12.5% had no formal education. These results contrasted with the education level of their spouses, as slightly less than half of the spouses had at least a junior high school education.

With respect to occupation 70 % of the women were farmers while 18.1 % were traders. For their husbands, on the other hand, 57.5 % were farmers and 23.1 % worked as laborers in private factories.

With respect to the number of living children, the results revealed that approximately 67% of the women had 1 to 3 living children, 29% had more than 3 living children while another 4% of women had no children.

With respect to family income nearly one-third of the respondents (30 %) had a family income of less than 300,000 kip per month while another two-fifths (41.3%) had a family income between 300,000 to 600,000 kip per month. The remainder, slightly more than one-quarter (28.7%) of the respondents, had a family income of more than 600,000 kip per month.

Table 1 Number and percentage of the married women of reproductive age according to socio-demographic and economic characteristics

General information	Number	Percentage
Age of respondents		
20-34 years	85	53.1
35-49 years	75	46.9
Min. = 20 Max. = 49	Mean = 33.3	SD = 7.9
Education of respondents		
No schooling	20	12.5
Primary	107	66.9
Junior high school	29	18.1
High school	4	2.5
Occupation of respondents		
Unemployed	11	6.9
Farmer	112	70.0
Trader	29	18.1
Laborer/worker	5	3.1
Government officer	3	1.9
Age of husbands		
21-35 years	61	38.1
36-50 years	83	51.9
50+ years	16	10.0
Education of husbands		
No schooling	8	5.0
Primary	75	46.9
Junior high school	47	29.4
High school	23	14.4
College/University	7	4.3

Table 1 Number and percentage of the married women of reproductive age according to socio-demographic and economic characteristics **(**cont.)

General information	Number	Percentage
Occupation of husbands		
Unemployed	2	1.3
Farmer	92	57.5
Trader	8	5.0
Laborer/worker	37	23.1
Government officer	21	13.1
No. of living children in family		
No children	6	3.8
1 - 3 children	108	67.5
3+ children	46	28.7
Family income		
Low income (< 300,000 kip)	48	30.0
Moderate income (300,000-600,000 kip)	66	41.3
High income (> 600,000 kip)	46	28.7

2.4.2 Knowledge about safe delivery

The respondents' knowledge about safe delivery was classified into the following 3 categories: "poor knowledge" was determined by a score of less than 60% of the total score (<7.2), "moderate knowledge" was determined by a score of between 60% - 80% and of the total score (. 7.2 - 9.6), and "good knowledge" was determined by a score greater than 80% of the total score (>9.6). The total score was 12. Table 2 illustrated that 41.2 % of the respondents had a moderate level of knowledge, 26.9 % had a poor level of knowledge, and 31.9 % had a good level of knowledge.

Table 2 Number and percentage of married women of reproductive age according to their level of knowledge about safe delivery

Knowledge of safe delivery		**Number**	**Percentage**
Poor knowledge (<60%)		43	26.9
Moderate knowledge (60% - 80%)		66	41.2
Good knowledge (> 80%)		51	31.9
Min. = 2	Max. = 11	Mean = 8.5	SD = 1.6

Table 3 illustrated the details of the married women's level of knowledge about safe delivery. More than 80 % of married women knew that an unsafe delivery increases a woman's and/or infant's chance of getting an infection, using sterilize medical equipment can protect mothers and newborn infants from infectious diseases, heavy post-partum haemorrhage can induce anemia in women, and women who have heart problems cannot be assisted in their delivery by a Traditional Birth Attendant (TBA). On the other hand many women did not know other important aspects of safe delivery. Thus only 37.5% knew that a woman could have a convulsion after delivery if she had insufficient rest during pregnancy, or that poor knowledge about obstetrics complications (on the part of husbands and other family members) can affect a woman's health during delivery (50.0%). In addition, only 54.4% of the married women realized that it was not normal to have prolonged labour pains, at the time of delivery, for more than 2 days.

Table 3 Number and percentage of married women of reproductive age according to their correct answers with respect to knowledge about safe delivery

Statement	Correct answer	
	Number	Percentage
1. It is natural for a woman to have labour pains lasting more than 2 days during the time of her delivery	87	54.4
2. Women who have delivered more than 4 times are at a higher risk to encounter a post partum haemorrhage	122	76.2
3. Prolonged labour does not effect a mother's health and/or the status of the foetus in the womb	120	75.0
4. Haemorrhage before childbirth is not a dangerous event for either the mother or the foetus	106	66.2
5. Heavy post partum haemorrhage can make a woman anaemic	138	86.2
6. A woman can have convulsions after delivery because of insufficient rest during her pregnancy	60	37.5
7. Experiencing a ruptured membrane, a long time before the actual delivery, will not affect the foetus' chance of dying in the uterus	118	73.7
8. Using sterilize medical equipment helps protect the mother and newborn infant from contracting infectious diseases	144	90.0
9. Poor knowledge about obstetrics complications, by husbands and other family members, does not affect a woman's health during labour and childbirth	80	50.0
10. Young mothers, below 18 years of age, are at a higher risk to encounter obstructed labour.	113	70.6

Table 3 Number and percentage of the married women of reproductive age according to their correct answers with respect to knowledge about safe delivery (cont.)

Statements	Correct answer	
	Number	Percentage
11. Women who have heart problems can give birth with assistance from Traditional Birth Attendants (TBAs)	134	83.7
12. An unsafe delivery provides women and/or infants a chance to contract infections	149	93.4

4.2 Part II Accessibility to safe delivery services

Table 4 showed that 54.4% of the married women appeared to have easy access to safe delivery services, while 45.6 % claimed to have difficulty accessing safe delivery services.

Table 4 Number and percentage of married women of reproductive age according to accessibility to safe delivery services

Accessibility to safe delivery services	Number	Percentage
Difficult access to safe delivery (score ≤ Mean)	73	45.6
Easy access to safe delivery (score > Mean)	87	54.4
Min. = 4 Max. = 9	Mean = 5.89	SD = 1.46

4.3 Part III Accessibility to information about safe delivery and support provided by husbands.

4.3.1. Accessibility to information about safe delivery

Table 5 illustrated that almost half of respondents (50.6 %) claimed to have easy access to information about safe delivery and 49.4% stated that they had difficulty accessing information about safe delivery .

With respect to the actual source of information about safe delivery the overwhelming majority of respondents (85%) stated that they received it from health personnel. Almost half of them (45.6 %) claimed to have also obtained information from printed materials. See the Appendix B Table 14.

Table 5 Number and percentage of married women of reproductive age having accessibility to sources of information about safe delivery

Accessibility to information		Number	Percentage
Difficult access to information (score ≤ Mean)		79	49.4
Easy access to information (score > Mean)		81	50.6
Min. = 0	Max. = 7	Mean = 2.59	SD = 1.51

4.3.2 Support provided by husbands

Table 6 showed that 57.5 % of the women received good support and encouragement from their husbands during pregnancy, delivery and the post partum period, while 42.5 % of the women received poor support from their husbands.

Table 6 Number and percentage of married women of reproductive age receiving support from their husbands

Husbands' support		Number	Percentage
Poor support (score ≤ Mean)		68	42.5
Good support (score > Mean)		92	57.5
Min. = 0	Max. = 5	Mean = 2.74	SD = 1.45

4.4 Part IV Respondents perception of safe delivery

Table 7 illustrates that an equal number and percentage of women (50%) had negative as well as positive perceptions about safe delivery.

Table 7 Number and percentage of married women of reproductive age according to their perceptions of safe delivery

Perceptions of safe delivery			Number	Percentage
Negative perception (score ≤ Median)			80	50.0
Positive perception (score > Median)			80	50.0
Min. = 21	Max. = 41	Median = 34.5 Q.D = 5.7	Q1 = 32.0	Q3 = 37.7

With regarding to intend delivery their next babies 85% of women were intended to delivery at hospital, while another 6.9% were still intended to delivery at home. See the appendix Table 16.

4.5 Part V The association between predisposing, enabling, and reinforcing factors and perceptions of safe delivery among MWRA

The researcher used Chi-square and Fisher Exact Test to determine any significant association (P-value of less than 0.05) between predisposing, enabling, and reinforcing factors and perceptions of safe delivery among married women of reproductive age. The results are shown in Table 8.

With regarding to predisposing factors, the age of the respondents had an association with whether or not women had a positive or negative perception of safe delivery. Younger married women of reproductive age tended to have a more positive perception of safe delivery than older women in this cohort group (P-value = 0.039). The age of husbands also demonstrated an association with whether or not the women had a positive or negative perception of safe delivery (P-value = 0.008). The study results also indicated that there was significant association between education and perceptions of safe delivery. Respondents with higher education levels tended to have more positive perceptions of safe delivery than those with a lower education level (P-value = 0.024). Other socio-demographic and economic factors did not show any association with perceptions of safe delivery.

According to accessibility to safe delivery information among women's age, the result also showed that there was not associated between accessibility to safe delivery information and women's age. See the appendix Table 18.

There was an association between the respondent's knowledge about safe delivery and their perception of safe delivery. Thus respondents with a poor level of

knowledge about safe delivery tended to have more negative perceptions of safe delivery than those individuals with a good level of knowledge (P-value = 0.042).

With regard to enabling factors, there was not any association between accessibility to safe delivery services and perceptions of safe delivery.

With regard to reinforcing factors, the study results showed that there was an association between access to information about safe delivery as well as the support from respondents' husbands and overall perceptions of safe delivery. The married women who indicated that they encountered difficulty accessing information tended to have more negative perceptions about safe delivery than those who had easy access to information (P-value = 0.007). Similarly those married women who indicated that they received good support and encouragement from their husbands had less negative perceptions about safe delivery more than those respondents who received poor support from husbands (P-value = 0.001).

Table 8 Association between predisposing, enabling, and reinforcing factors and perceptions of safe delivery among MWRA

Variable	Total sample (n)	Perception of safe delivery		Chi-square P-value
		Negative (%)	Positive (%)	
Age				0.039*
20-34 years	85	42.3	57.7	
35-49 years	75	58.6	41.4	
Education of respondents				0.024*
No schooling	20	75.0	25.0	
Primary school	107	49.5	50.5	
Junior/High school	33	36.4	63.6	
Occupation of respondents				0.730
Non farmer	48	52.1	47.9	
Farmer	112	49.1	50.9	

Table 8 Association between predisposing, enabling, and reinforcing factors and perceptions of safe delivery among MWRA (cont.)

Variable	Total sample (n)	Perception of safe delivery		Chi-square P-value
		Negative (%)	Positive (%)	
Age of husbands				0.008*
21-35 years	61	34.3	65.7	
36- 50 years	83	60.2	39.8	
50+ years	16	56.3	43.7	
Education of husbands				0.975
No schooling	8	50.0	50.0	
Primary school	75	49.3	50.7	
Junior/high school	70	51.4	48.6	
College/University	7	42.9	57.1	
College/University	0	0.0	0.0	
Occupation of husbands				1.000
Non farmer	68	50.0	50.0	
Farmer	92	50.0	50.0	
No. of living children				1.000
No children	6	50.0	50.0	
1- 3 children	108	49.0	51.0	
3+ children	46	52.2	47.8	
Family income				0.711
Low income (<300,000kip)	48	54.2	45.8	
Moderate income (300,000-600,000kip)	66	50.0	50.0	
High income (>600,000kip)	46	45.7	54.3	
Knowledge about safe delivery				0.042*
Poor (<60%)	43	65.1	34.9	
Moderate (60% - 80%)	66	48.5	51.5	
Good (> 80 %)	51	39.2	60.8	

Table 8 Association between predisposing, enabling, and reinforcing factors and perceptions of safe delivery among MWRA (cont.)

Variable	Total sample (n)	Perception of safe delivery		Chi-square P-value
		Negative (%)	Positive (%)	
Accessibility to health service				0.874
Difficult to access (≤ mean)	73	49.3	50.7	
Easy to access (>mean)	87	50.6	49.4	
Accessibility to information on safe delivery				0.007*
Difficult to access (≤mean)	79	60.8	39.2	
Easy to access (>mean)	81	39.5	60.5	
Support provided by husbands :				0.001*
Poor support (≤ mean)	68	64.7	35.3	
Good support (>mean)	92	39.1	60.9	

*Significance at P-value < 0.05

With respect of the women's intention to delivery, the result showed that there was associated between intend to delivery of women and perceptions of safe delivery (P-Value = 0.001). Women who had intended to delivery at hospital (55.5%) had positive perception more than women who had intended to delivery at home. See the Appendix Table 17.

4.5 Part VI The analysis of factors that could predict the perceptions about safe delivery among MWRA.

Multiple Logistic Regression Analysis was used to select the independent variables that were statistically significant determinants to predict negative perceptions of safe delivery among married women of reproductive. Table 9 illustrated all the independent variables included in the Multiple Logistic Regression analysis.

Table 9 Multi Logistic Regression analysis of predisposing, enabling and reinforcing factors and negative perceptions of safe delivery among MWRA

Factors	Negative perception of safe delivery		
	Adj. odds ratios	95 % CI	P-value
Predisposing factors:			
Age (years)			
20-34	1.000		
35-49	1.334	.447 - 3.980	.606
Educational level			
No schooling	.862	.079 – 9.377	.903
Primary school	1.106	.176 – 6.928	.915
Junior/High school	1.000		
Occupation			
No farmers	1.039	.453 – 2.634	.843
Farmers	1.000		
Age of husbands (years)			
21-35	1.000		
36-50	2.901	1.002 – 8.405	.050
50+	3.422	.707 – 16.571	.126
Educational level of husbands			
Junior/high school	1.401	.249 – 7.895	.702
College/University	1.000		
Occupation of husband			
Non farmer	1.160	.482 – 2.790	.740
Farmers	1.000		
Number of living children in family			
No children	1.301	.217 – 7.803	.774
1 - 3 children	1.000		
3 + children	.721	.293 – 1.772	.476

Table 9 Multi Logistic Regression analysis of predisposing, enabling and reinforcing factors and negative perceptions of safe delivery among MWRA (cont.)

Factors	Negative perceptions of safe delivery		
	Adj. odds ratios	95 % CI	P-value
Family income			
Low income	.953	.324 – 2.806	.931
Moderate income	1.076	.434 -2.668	.875
High income	1.000		
Knowledge about safe delivery			
Poor knowledge	2.207	.866 – 5.624	.097
Moderate knowledge	1.334	.581 – 3.059	.497
Good knowledge	1.000		
Enabling factors :			
Accessibility to safe delivery			
Difficult access	.871	.420 – 1.806	.710
Easy access	1.000		
Reinforcing factors:			
Accessibility to information about safe delivery			
Difficult access	2.201	1.071 – 4.765	.045*
Easy access	1.000		
Support provided by husbands			
Poor support	2.752	1.276 – 5.932	.010*
Good support	1.000		

*Significance at P-value < 0.05

Through the use of Multiple Logistic Regression analysis it was found that there were significant associations between accessibility to information about safe delivery and support from husbands with negative perceptions of safe delivery, when adjusted for other factors in the model.

When testing the association for the final model using Multiple Logistic Regression, it was found that only age, accessibility to information about safe delivery, and husband's support were associated with negative perceptions of safe delivery (P-value = 0.027; 0.021 and 0.023 respectively), while there was no association between knowledge of safe delivery and negative perceptions of safe delivery (as shown in Table 10).

Table 10 The final Multiple Logistic Regression analysis between age, accessibility to information about safe delivery, and husbands' support, and negative perceptions of safe delivery among MWRA

Factors	**Negative perception of safe delivery**		
	Adj. odds ratios	**95 % CI**	**P-value**
Age of respondents(years)			
20-34	1.00		
35-49	2.145	1.089 – 4.224	.027*
Knowledge of safe delivery			
Poor knowledge	2.301	.940 – 5.631	.068
Moderate knowledge	1.350	.617 – 2.952	.452
Good knowledge	1.000		
Accessibility to safe information			
Difficult access	2.217	1,126 – 4.367	.021*
Easy access	1.000		
Husband support			
Poor support	2.275	1.121 – 4.619	.023*
Good support	1.000		

*Significance at P-value < 0.05

Forward (Wald) selection identified statistically significant predictors of negative perceptions of safe delivery among married women of reproductive age. Table 11 illustrates that there was a significant association between older married women of reproductive age and negative perceptions of safe delivery (P-value =

0.019). Married women of reproductive age between 35-49 years of age were 2.2 times more likely to have negative perceptions than those who were age 20-34 years.

The results also showed that there was a strong significant association between accessibility to information about safe delivery and perceptions of safe delivery among married women of reproductive age (P-value = 0.021). Thus married women of reproductive age who indicated that they had poor access to information about safe delivery were 2.4 times more likely to have negative perceptions of safe delivery than those who stated that they had good access to information about safe delivery. It was also found that there was a significant association between the level of support and encouragement provided by husbands and negative perceptions about safe delivery (P-value = 0.014). Married women of reproductive age who indicated that they received poor support from their husbands were 2.4 times more likely to have negative perceptions than those who claimed to have received a good level of support and encouragement from their husbands at the time of their pregnancy, delivery and post-partum periods.

Table 11 The final predictors included in the model

Factors	**Negative perception of safe delivery**		
	Adj. odds ratios	**95 % CI**	**P-value**
Age of respondents(years)			
20-34	1.00		
35-49	2.224	1.138 - 4.347	.019*
Accessibility to safe information			
Difficult access	2.354	1.206 - 4.596	.021*
Easy access	1.000		
Husband support			
Poor support	2.410	1.198 - 4.847	.014*
Good support	1.000		

*Significance at P-value< 0.05

CHAPTER V
DISCUSSION

This cross-sectional study was conducted on a cohort of married women of reproductive age (i.e. between the ages of 20-49 years) living in rural communities in Pakgneum District, of the Vientiane Capital Area, who were potentially exposed to various risks during delivery and the immediate post-partum period. The study's aim was to envision ways to prevent maternal and newborn infant morbidity and mortality, by better understanding the relationship between women's perceptions of safe delivery, various demographic and socio-economic factors, and other relevant issues such as knowledge about safe delivery, accessibility to safe delivery services, accessibility to information about safe delivery, and the support and encouragement provided by husbands during pregnancy, delivery, and the post-partum period.

5.1 Methodological concerns

The present study was conducted in rural communities among married women of reproductive age, who were presently living in the village with their respective spouse for at least one year. A structured questionnaire was designed for interviewing purposes in order to minimize misunderstanding between the research assistant interviewers and those women agreeing to participate in the study. This methodology also aimed to reduce the likelihood of collecting incomplete data from the participants. A three stage cluster sampling technique was used to randomly identify a representative population, and a simple random sampling methodology was performed to avoid selection bias during the selection of catchment areas, villages, and married women of reproductive age. The researcher-cum-supervisor also was physically present to observe the entire interview process as well as able to check each questionnaire form after the research assistants completed their interviews in

order to ensure that the collected data was of a high quality. The fact that the research assistants, or data collectors, were health personnel may have influenced, to some extent, the responses of study participants. Previous studies of women's perceptions regarding obstetrics complications by Hasan J, Nisar N. in Pakistan(18), the perception of bleeding as a dangerous sign during pregnancy and childbirth by Matsuyama A, Moji K in Nepal (19) as well as that of Oyo-Ita AE, Ituk in Nigeria (24) were different from the present study in terms of the participant's socio-cultural, economic, and education background as well as the place setting. As such the results of these earlier studies may be different than the observations and findings from the current study.

5.2 The relationship between socio-demographic and economic factors and the perception of safe delivery among MWRA in Parkgneum district.

The present study demonstrated that the age of the married women and their educational background, as well as the age of their respective spouses, were directly associated with the participants' perceptions of safe delivery. Other demographic and socio-economic factors did not exhibit any association with the married women's' perceptions of safe delivery. Table 8 illustrated that younger married women of reproductive age (i.e. those 20-34 years old) had a better perception of safe delivery than older members of this cohort (P-value = 0.039). When testing the association for a final model using Multiple Logistic Regression analysis and Forward (Wald) selection identifying statistically significant predictors of negative perceptions of safe delivery, it was found that married women's ages had a significant association with perceptions of safe delivery (P-value = 0.019) as shown in Table 11. The findings showed that married women between 35 -49 years of age were 2.3 times more likely to have negative perceptions of safe delivery than women 20-34 years of age. This observation illustrates that a woman's age is a determinant factor and can strongly influence their perceptions of safe delivery. Kabir MA reported a similar finding in their study on safe delivery practices in rural Bangladesh. Their study illustrated that women aged 20-34 years adopted safe delivery practices twice the level of older

women (25). The Lao Reproductive Health Survey 2005 also showed that married women 20 - 34 years of age had greater access to safe delivery services than either younger, and older women from this cohort group (5).

The respondents' educational background also indicated an association with perceptions of safe delivery. Table 8, for example, illustrated that married women of reproductive age with higher educational levels had better perceptions of safe delivery than those women who had less formal education (P-value = 0.024). When testing this association using Multiple Logistic Regression analysis it was found, however, that educational level had no direct association with perceptions of safe delivery, and therefore little if any impact on the safe delivery practices of women. This finding was contrary to that found in the study of safe delivery practices in Bangladesh. The latter illustrated that there was a direct relationship between formal education and safe delivery practices, with those women having completed high educational levels having 29 times the accessibility to safe delivery practices than women with no formal education (25). Another study that focused on traditional childbirth practices and beliefs in Zambia indicated that married women with high educational levels were 7 times more likely than women with lower educational levels to have a safe delivery (26). In addition the study by Salam A et. al. focusing on unequal utilization of safe delivery services in Bangladesh similarly demonstrated that women with high education backgrounds were much more likely to deliver at health facilities (40%) than women with no schooling (32). One explanation for the findings in Laos may simply be that formal educational level, by itself, does not seem to play an important role in determining the perceptions of safe delivery among married women of reproductive age.

The present study illustrated that there was not any statistically significant association between the birth order and/or the number of living children and perceptions of safe delivery. Although the findings showed that women who had 3 or more children (52.2%) had a more negative perception of safe delivery than those women who had less than 3 children (41.2%), these difference could have been partially influenced by the age of the respondent rather than the number of children

The findings in Laos also differed from the study in Ethiopia by Mekonnen Y concerning factors influencing the use of maternity health services. The latter study indicated that birth order had an impact on safe delivery services, with the probability of giving birth at health facility decreasing for grand multigravida mothers in comparison to women who delivered four or fewer times. These findings may be due to the fact that women who delivered many times were older and were not exposed to information or new ideas concerning safe delivery practices in comparison to younger women with fewer deliveries (36).

Table 8 illustrated that there was no statistically significant association between family income and perceptions of safe delivery. This finding was contrary to that reported by Nigussie M, who found that in Ethiopia women with low incomes had more difficulty accessing safe delivery services than women with high incomes (31). The study in Bangladesh focusing on equity of maternal health care services similarly indicated that rich women had easier access to quality care (28.4%) when compared to poor women (3.3%) (32). Anwar I et. al. also found that the richest women had greater access to safe delivery services (33). And finally the Multiple Indicators Cluster Survey (MICS), in the Lao PDR, found that skilled birth attendants participated in the deliveries of the wealthiest women 81% more frequently than for that of the poorest women (3.3%) (35).

5.3 The relationship between knowledge about safe delivery and perceptions of safe delivery among married women of reproductive age.

Table 8 illustrated that there was a statistically significant association between a woman's knowledge about safe delivery and their respective perceptions of safe delivery (P-value=0.042) by using Chi-square test. When testing this association using Multiple Logistic Regression analysis, it was found that women's knowledge about safe delivery was not associated with negative perceptions about safe delivery when adjusted for other factors in the model, as shown in Table 9. It may be the

another study factors could be effected to the association between knowledge about safe delivery and perceptions of safe delivery. This finding was contrary to that reported by Khanum PA et. al. in Bangladesh that focused on women's knowledge and practices with respect to complications of pregnancy and childbirth. Khanum PA et. al. found that poor knowledge caused women to delay seeking appropriate care (37). Nasreen H. et al. in Bangladesh also found that good knowledge about obstetrics complications could influence women to become aware about safe delivery (38).

5.4 The relationship between accessibility to safe delivery services and perceptions of safe delivery among married women of reproductive age.

The present study illustrated that there was no significant association between a woman's accessibility to safe delivery services and their perceptions of safe delivery, as shown in Table 8. The study did find, however, that a sizable percentage of women (45.6%) had difficulty accessing safe delivery services, as shown in Table 4. This determination was based upon the distance from the respondent's home to the nearest appropriate health facility. Appendix B Table 12, for example, showed that almost two-thirds of the women (64.4%) had to travel more than 10 kms. to an appropriate health facility. Nearly three-quarters of the respondents (74%) had to use either public or private transportation to reach the health facility in case of an emergency, and more than half (54%) of the women claimed that it was expensive to travel to the nearest appropriate health facility. These findings can greatly influence accessibility to obstetric care services as well as a woman's overall perception of safe delivery. It was similar to that reported in Tibet by Adams V et. al. who reported that rural women did not use health facilities because they were located too far away from the prospective clients' homes, and women accordingly had problems traveling to obtain safe delivery services (23). Blum L S et. al. similarly found in Bangladesh that women complained that transportation costs were expensive, and this limited accessibility to safe delivery services (41).

5.5 The relationship between accessibility to information about safe delivery and the perceptions of safe delivery among married women of reproductive age.

The findings from the present study illustrated that there was a statistically significant association between the accessibility to information about safe delivery and women's perceptions of safe delivery (P-value = 0.045) when adjusted for other factors in the model, as shown in Table 9. When testing the association for a final model and Forward (Wald) selection, the study was able to identify statistically significant predictors of negative perceptions of safe delivery. It was found that there was a strong association between accessibility to information about safe delivery and perceptions about safe delivery among married women of reproductive age (P-value = 0.012), as shown in Table 11. The present study demonstrated that women who had difficulty accessing information about safe delivery were 2.4 times more likely to have negative perceptions of safe delivery than those women who indicated that they had easy access to information about safe delivery. Access to adequate and correct information about safe delivery helps women to better understand as well as have a greater awareness about the importance of safe delivery services. This finding was similar to the Lao Reproductive Health Survey 2005 demonstrated that women in rural areas have limited to access to information concerning obstetrics complications, and as a result 85% of all pregnant women continue to give birth at home (5), Kabir MA (25), and Nigussies M et. al (31) were illustrated that the high percentage of home deliveries were due to women's limited access to information about safe delivery services.

5.6 The relationship between support and encouragement provided by husbands and the perceptions of safe delivery among women of reproductive age

The present study illustrated that there was a statistically significant association between the support provided by husbands and their respective wife's perceptions of safe delivery (P-value = 0.010), as shown in Table 9. When testing the

association for a final model and Forward (Wald) selection, the study identified statistically significant predictors of negative perceptions of safe delivery. It was found that there was an association between the level of support provided by husbands and women's perceptions about safe delivery (P-value = 0.014), as shown in Table 11. This finding indicated that married women who received poor support from their husbands were 2.5 times more likely to have negative perceptions of safe delivery as compared to those women who claimed to have received good support from their husbands. This is similar to the findings reported by Nejad VM in the Republic of Iran, in which 88.4% of husbands with a positive attitude about safe delivery encouraged their wives to obtain safe delivery services (43) and corresponded to that found in Sweden by Ny P et. al. which indicated that positive attitudes, on the part of husbands, resulted in improved women's health care during pregnancy (44).

CHAPTER VI
CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The present cross sectional study was conducted to determine the factors that influence the perceptions of safe delivery among married women of reproductive age. The study area consisted of 10 rural communities in Parkgneum district, in the Vientiane Capital Area, of the Lao PDR. The study explored the association between Various demographic and socio-economic factors, as well as knowledge, accessibility to health care, accessibility to information about safe delivery, and the level of support provided by husbands with women's perceptions of safe delivery

The study methodology consisted of interviewing women by using a structured questionnaire. The interviews were conducted from 9th - 30th January 2009. The sample population consisted of 160 married women of reproductive age who lived in 10 villages in Parkgneum district. The questionnaire was originally pre-tested for reliability and validity in the 3 villages of Somsavath, Sompraseuth and Veunkhaen located in Parkgneum district. The Kuder-Richardson coefficient of reliability was 0.89 for the knowledge portion, while the Cronbach's Alpha coefficient of reliability was 0.60 for the perception component of the study. Univariate analysis (mean, standard deviation, median, quartile frequency and percentage) was used to provide summaries for the descriptive components of the study. Chi-Square and Fisher Exact tests were used to assess any significant associations between independent and dependent variables of interest, with respect to negative and positive perceptions of safe delivery among married of reproductive age. Multiple Logistic Regression analysis was future used to evaluate the magnitude and significance of predictive independent variables previously found significant with negative perceptions of safe

delivery.

There was a good level of cooperation and collaboration from the cohort of married women of reproductive age, in the 10 selected villages, throughout the entire data collection period. Most of the target group women were eager to volunteer to participate in the research study. Each participant signed an informed and voluntary consent form without raising any concerns or obstacles. The high level of cooperation, among study participants and interviewers, allowed the researcher to collect highly reliable data.

The study findings illustrated that the average age of the 160 participants was 33.36 years, with a standard deviation of 7.94. The youngest respondent was 20 years of age while the oldest was 49 years of age. More than half (53.1%) of the participants were young women 20-34 years of age, and most of them (70%) were farmers.

The women's perceptions of safe delivery were classified as either being "negative" or "positive". The study findings demonstrated that an equal number, and percentage, of respondents (50% each) had negative as well as positive perceptions of safe delivery.

With respect to the socio-demographic and economic factors, as well as the respondents' knowledge about safe delivery and accessibility to safe delivery services, it was found that there were no significant associations between these variables and negative perceptions of safe delivery. The findings illustrated, however, that only accessibility to information about safe delivery and husbands' support (P-value = 0.045; 0.010 respectively) were significantly associated with perceptions of safe delivery when adjusted for other factors in model.

When testing for the association for the final model by using Multiple Logistic Regression analysis and Forward (Wald) selection, the study identified statistically significant predictors of negative perceptions of safe delivery. The

findings illustrated that there was a significant association between older individuals and negative perceptions of safe delivery (P-value = 0.019). Thus respondents 35-49 years of age were 2.3 times more likely to have negative perceptions of safe delivery than women who were 20-34 years old.

With respect to accessibility to information about safe delivery, it was found that there was a significant association between accessibility to information about safe delivery and negative perceptions of safe delivery (P-value = 0.012). Thus women who indicated that they had poor access to information about safe delivery were 2.4 times more likely to have negative perceptions of safe delivery than those who stated that they had good access to information dealing with safe delivery.

The study findings similarly demonstrated that there was a significant association between the level of support and encouragement provided by husbands and negative perceptions about safe delivery (P-value = 0.014). Women who indicated that they received poor support from their husbands were 2.5 times more likely to have negative perceptions about safe delivery than the cohort who claimed that they received good support and encouragement from their husbands at the time of their pregnancy, delivery, and post-partum period.

6.2. Recommendations

6.2.1. Future program implementation

The findings from this study are potentially beneficial for policy makers, health planners, and project mangers concerned with increasing accessibility to and acceptability for safe delivery services among rural MWRA in order to reduce the high level of maternal mortalities still found in many regions of the Lao PDR. As such the researcher would like to propose several recommendations based upon selected study findings:

1. As highlighted in Table 8, there was a significant association between poor knowledge about safe delivery and negative perceptions about safe delivery. As

such senior level policy makers, health planners, health managers and health workers need to work closely with one another to design and disseminate appropriate health education and specific information about safe delivery services to women, community leaders, and family members. Without more intensive efforts to educate the target population it will be difficult to increase the necessary knowledge needed to have positive perceptions about safe delivery. By expanding relevant interventions to increase the level of knowledge about safe delivery services and practices, mothers, other family members, and the community as a whole will be able to develop positive attitudes and perceptions about safe delivery. This process is essential to improve the overall health status of women and young children in Laos. The Ministry of Health, working with its partners from international assistance organizations, needs to emphasize the importance of increasing efforts at providing health education for maternal and child health services, especially with respect to that of safe delivery services for women living in rural areas.

2. Policy makers, health planners, health managers, and health workers also need to pay more attention to the fact that a large percentage of rural women claim to have difficulty accessing information about safe delivery. Greater efforts should be undertaken to identify appropriate sources of information, the types of messages, as well as the content of the information needed, to ensure that the target population has easy access to important health information that can have a great impact upon the health of mothers and newborn infants.

3. Relevant government organizations need to strengthen and encourage community participation, through the use of a multi-sectoral approach, to upgrade the quality as well as the accessibility of safe delivery programs in rural areas in an effort to improve the health status of mothers and children. Greater support and involvement from the private sector, mass organizations, and local agencies are needed to ensure that women make greater use of safe delivery services.

4. Motivate pregnant women to get antenatal care and encourage them to deliver babies at hospital in order to ensure both mother and newborn infant have safety during pregnant and delivery period.

5. Safe delivery of women and newborn infants should become topics that are introduced into formal curricula at the high school level, as well as become topics included in the training guidelines for various categories of village health volunteers. This approach can dramatically increase accessibility to correct information about safe delivery; especially among male members of Lao society; encouraging the latter to take greater responsibility for as well as to be actively involved in promoting and supporting safe delivery services for women.

6.2.2 Recommendations for further study

The current study was carried out in only one rural district of Laos, a geographic area that should be noted, however, which had relatively good accessibility to health care. The target population consisted of Lao Loum (i.e. ethnic Lao) women of reproductive age. Although the information collected, from the current study, can be of great value to policy makers, health planners and managers, as well as local health workers, the results may not be representative for the nation as a whole. Laos contains approximately 50 ethnic groups, and many rural communities are located several days from the nearest appropriate health facility. The researcher would thus like to suggest that further studies, with the same general objectives, be undertaken in other sections of the country. Through the use of in-depth interviews additional relevant data can be collected that can provide policy and decision makers with the necessary information they need to devise appropriate interventions that can truly improve the health of women and children in rural and remote areas of the Lao PDR.

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APPENDIX

APPENDIX A

Mahidol University

No …….. Date ……/……../……..

QUESTIONNAIRES

THE PERCEPTIONS OF SAFE DELIVERY AMONG MARRIED WOMEN OF REPRODUCTIVE AGE BETWEEN 20 AND 49 YEARS OLD IN PAKGNEUM DISTICT, VIENTIANE MUNICIPALITY, LAO PDR

Objective of the Questionnaire

This questionnaire is constructed for collecting relevant data on women of reproductive age. This includes their social – democratic characteristics, knowledge, accessibility to safe delivery services, sources of information, their husband's support, and their own perceptions to safe delivery. The data will be kept with the researcher and co-researcher only.

The researcher aims to help determine factors related to the perceptions of safe delivery among married women of reproductive age, between 20 and 49 years of age. There are no correct or incorrect answers to any of the questions included on this questionnaire form. It is important that your answers reflect your own opinions and feelings. If you have any concerns or suspicions please do not hesitate to ask the members of the research team. Our research team will be happy to answer any of your questions.

Thank you

PART I: PREDISPOSING FACTORS:

Please answer the following questions by filling in the blanks or mark an "x" in the appropriate box:

1. How old are you? ……years (complete years as of last birthday)

2. How many years did you study in school …… years (number of completed years

3. What is your main occupation ?
   - ☐ 1. Unemployed
   - ☐ 2. Farmer
   - ☐ 3. Trader
   - ☐ 4. Laborer
   - ☐ 5. Government officer
   - ☐ 6. Other (Please specify) ……

4. What is your husband's age? … years (complete years as of last birthday)

5. How many years did he study in school … years (number of completed years)

6. What is your husband's main occupation?
   - ☐ 1. Unemployed
   - ☐ 2. Farmer
   - ☐ 3. Trader
   - ☐ 4. Laborer
   - ☐ 5. Government officer
   - ☐ 6. Other (Please specify) ……

7. What is your total monthly income?.....kip

8. How many children are still living?.....children

Women's knowledge of safe delivery

Please mark an "x" in the appropriate box to answer the following statements

No.	Statement	Yes	No
9.	It is natural for a woman to have labor pains for more than 2 days during the time of her delivery		
10.	Women who have delivered more than 4 times are at a higher risk to encounter a post-partum haemorrhage		
11.	Prolonged labour does not effect a mother's health and/or the status of the fetus in the womb		
12	Haemorrhage before childbirth is not a dangerous event for either the mother or the fetus		
13.	Heavy post partum haemarrhage can make a woman anemic.		
14.	A woman can have convulsions after delivery because of insufficient rest during her pregnancy.		
15.	Experiencing a ruptured membrane, a long time before the actual delivery, will not affect the fetus' chances of dying in the uterus.		
16.	Using sterilize medical equipment helps protect the mother and newborn infant from contracting infectious diseases		
17.	Poor knowledge about obstetric complications, among the husband and other family members, does not affect a woman's health during labour and childbirth.		
18.	Young mothers, below 18 years of age, are at a higher risk to encounter obstructed labour.		
19.	Women who have heart problems can give birth with assistance from Traditional Birth Attendants (TBAs).		
20.	An unsafe delivery provides women and/or infants a chance to get infections.		

PART II: ENABLING FACTORS

21. How far is your house located from the district hospital?..... kms

22. In case of severe labour and delivery what types of transportation are available to help bring you to the district hospital?

☐ 1. Your own vehicle
☐ 2. Public transportation
☐ 3. Rented vehicle
☐ 4. Other (Specify) ……..……

23. Is it convenient for you to get to the district hospital?

☐ 1. Yes
☐ 2. No

24. Is it expensive for you, and accompanying family members, to travel from your house to the district hospital?

☐ 1. Yes
☐ 2. No

PART III: REINFORCING FACTORS:

A. Sources of Information regarding safe delivery:

25. Where did you get information about labour and delivery ?
(Respondents can indicate more than one choice)

25.1. Health personnel	☐ Yes	☐ No
25.2. Friends	☐ Yes	☐ No
25.3. Family members/husband	☐ Yes	☐ No
25.4. Radio announcements	☐ Yes	☐ No
25.5. Television announcements	☐ Yes	☐ No
25.6. Printed materials (eg. posters, brochures, magazines)	☐ Yes	☐ No
25.7. Newspapers	☐ Yes	☐ No

B. Support Provided by Husbands:

No.	Statement	Yes	No
26.	Did you and your husband plan for your pregnancy and delivery?		
27.	Did you and your husband discuss/plan about the number and time to have children?		
28.	Did your husband go to hospital with you when you needed health care services?		
29.	Do your husband provide information regarding health care?		
30.	Did you and your husband ever discuss family planning?		

PART IV: PERCEPTION ON SAFE DELIVERY

Please put an “x” in the appropriate box after the following statements

No.	Statement	Agree	Not sure	Disagree
31.	Traditional Birth Attendants (TBAs) have delivery skills the same as health personnel at the hospital			
32.	Hospital delivery provides good care for mothers and newborn babies more than home delivery			
33.	TBAs have experience to deal with most delivery complications.			
34.	Home delivery is not safe for both mothers and newborn babies.			
35.	Experiencing heavy haemorrhage after delivery is good for the mother’s health because the			

No.	Statement	Agree	Not sure	Disagree
	bleeding gets rid of “bad blood” in the woman’s body			
36.	Delivery attended by TBAs put a woman at a higher risk for maternal death.			
37.	Post partum infections are due to the use of unclean instruments from delivery kit.			
38.	TBAs cannot take care the prolonged labor.			
39.	Traditional Birth Attendants (TBAs) can deliver an infant, in a transverse position, through the birth canal.			
40.	A delivery at a hospital can prevent a woman from obstetric complications.			
41.	Accessibility to health information on safe delivery is important to encourage pregnant women to give birth at a hospital.			
42.	Hypertension disorders are not the leading cause of maternal mortality.			
43.	Safe delivery of pregnant women at a hospital is dependent upon the decision of husbands.			
44.	Low family income is an obstacle for hospital delivery			

45. Where do you next intend to deliver?

☐ 1. I will deliver at a health facility

☐ 2. I will deliver at home

☐ 3. I have not yet decided

“Thank you very much for taking the time to answer these questions”

APPENDIX B

Table 12 The percentage of MWRA according to perceptions of safe delivery by items

Statement	Percentage of perception		
	Agree	**Not sure**	**Disagree**
1. Traditional Birth Attendants (TBAs) have delivery skills the same as health personnel at the hospital	48.7	6.3	45.0
2. Hospital delivery provides good care for mothers and newborn babies more than home delivery.	90.6	2.5	6.9
3. TBAs have experience to deal with most delivery complications.	23.1	10.0	66.9
4. Home delivery is not safe for both mothers and newborn babies.	81.2	3.1	15.7
5. Experiencing heavy haemorrhage after delivery is good for the mother's health because the bleeding gets rid of "bad blood"in the woman's body.	51.2	6.3	42.5
6. Delivery attended by TBAs put a woman at a higher risk for maternal death.	70.0	13.1	16.9
7. Post partum infections are due to the use of unclean instruments from delivery kit.	88.1	5.6	6.3
8. TBAs can not take care the prolonged labour	55.6	7.5	36.9

Table 12 The percentage of MWRA according to perceptions of safe delivery by items (cont.)

Statement	Percentage of perception		
	Agree	Not sure	Disagree
9. Traditional Birth Attendants can deliver an infant, in a transverse position, through the birth canal	18.1	8.1	7.8
10. A delivery at a hospital can prevent a woman from obstetric complications.	87.5	5.0	7.5
11. Accessibility to health information on safe delivery is important to encourage pregnant women to give birth at a hospital.	85.6	9.4	5.0
12. Hypertension disorders are not the leading cause of maternal mortality.	30.6	20.0	49.4
13. Safe delivery of pregnant women at a hospital is dependent upon the decision of husbands.	49.3	6.9	43.8
14. Low family income is an obstacle for hospital delivery	73.7	6.3	20.0

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Table 13 Number and percentage of MWRA according to accessibility to safe delivery services by items

Variables	Number	Percentage
1. Distance		
< 5 km	25	15.6
5-10 km	32	20.0
> 10km	103	64.4
2. Car's type		
Own car	42	26.2
Other cars(Public, private)	118	73.8
3. Travelling to health facility		
Inconvenience	55	34.4
Convenience	105	65.6
4. Transportation cost		
Inexpensive	74	46.2
Expensive	86	53.8

Table 14 Number and percentage of MWRA having accessibility information of safe delivery by items

Sources	Number	Percentage
1. Health personal	136	85.0
2. Friends	79	49.3
3. Family member/husband	73	45.6
4. Radio	24	15.0
5. Television	34	21.2
6. Printed materials (eg posters, brochure, magazine.)	54	33.7
7. Newspapers	10	6.2

Table 15 Number and percentage of MWRA receiving husbands support by items

Variables	Number	Percentage
1.Plan to have children	87	54.6
2. Number of children	108	67.5
3. Accompany to hospital	60	37.5
4. Husbands provide information regarding health care	76	47.5
5. Family Planning.	103	64.4

Table 16 Number and percentage of married women of reproductive age intending for the next delivery

Place of delivery	Number	Percentage
Health facility	137	85.6
Home	11	6.9
Not yet decided	12	7.5

Table 17 Association between intention to the next delivery and perception of safe delivery among MWRA.

Place of delivery	Total sample (n)	Perception of safe delivery		Chi-square P-value
		Negative (%)	Positive (%)	
Health facility	137	44.5	55.5	0.001
Home	11	100	0	
Not yet decided	12	66.7	33.3	

Table 18 Association between women's age and source information about safe delivery

Factor	Total sample (n)	Source information		Chi-square P-value
		Difficult accessibility	Easy accessibility	
Women' age (years)				0.337
20 – 34	85	53.0	47.0	
35- 49	75	45.3	54.7	

APPENDIX C

Participant Information Sheet

In this document, there may be some statements that you do not understand. Please ask the principal investigator or his/her representative to give you explanations until they are well understood. To help your decision making in participating the research, you may bring this document home to read and consult your relatives, intimates, personal doctor or other doctor.

Title of Research Project : The perceptions of safe delivery among married women of Reproductive age between 20 and 49 years old.

Name of Researcher : *Dr. Khanthong Siharath .*

Research Site - Office and its telephone number available for contact both in and out of the office hours

Master of Primary Health Care Management (MPHM) Office at ASEAN Institute for Health and Development, University, Salaya, Phutthamonthon, Nakhonpathom, Thailand.

Tel. (66) 2441-904-3 Fax: (66) 2441-9044 [in office hours] ; Tel . 080-4180448 [Out office hours] or Maternal and Child Health Center, Ministry of health, Vientiane , Lao PDR.

Tel. 007-856-21452562 , fax 007-856-21452562 , 007-856-20-5464997.

Email: siharath-sr@hotmail.com

This research project aims: To determine factors relating to the perceptions of safe Delivery among married women of reproductive age between 20 and 49 years old.

The expected benefit is to create awareness of safe delivery, giving information about risk factors to individual mother, family member, community and also give the result of this study to policy makers, planners and project mangers to

develop effective plan on mother promotion and develop guideline into mother and child health care services.

You are invited to participate in this research project because you are a married women of reproductive age between 20 and 49 years old. Your are a Lao nationality. You have been living in village for at least one year with your husband. You have or do not have a child.

The aim of this study is to indicate the association of socio-economic, knowledge, accessibility to service, information resource, husband support and perceptions of safe delivery among married women of reproductive age which may enhance to health care provider management to identify and prevent mothers who are risk to unsafe delivery. Early identification and intervention can prevent maternal mortality from unsafe delivery.

There will be 160 participants and the research project will last from August 2008 to April 2009.

If you decide to participate in the research project, you will be interviewed once by investigator or research assistance using structured questionnaire concerning the perception of safe delivery. The questionnaire consists of four parts : predisposing factors(socio-demographic economic: (age, education, occupation, number of children, income of family;); knowledge on safe delivery), enabling factors (Accessibility to safe delivery service: distance, transportation, convenient transportation and cost of transportation) , reinforcing factors(source of information: health personnel, friends mass media; support from husband) and perception of safe delivery among married women of reproductive age (20-49 years old). It will take you 40 minutes to complete. If you answer incorrectly, the investigator will provide the correct knowledge to you. If you feel uncomfortable to answer some questions, you can refuse to respond to those questions.

If you have any question regarding with study, please do not hesitate to contact Dr. khanthong Siharath Tel. 020-5464997 or (66) 080-4180448

Remuneration. There is no remuneration

Expense. There is no expense to participants on this study.

If relevant information arises about benefits and risks of the research project, the researcher will inform the participant immediately and without concealment.

The participant's private information will be kept confidential, it will not be subject to an individual disclosure, but will be included in the research report as part of the overall results. Individual information may be examined by groups of persons e.g. from a funding organization, a government agent in charge, the ethics committee, etc.

The participant has the right to withdraw from the project at anytime without prior notice. And the refusal to participate or the withdrawal from the research project will not at all affect the proper service or treatment that he/she will receive.

On the condition that you are not treated as indicated in this information sheet, you can contact the Chair of Mahidol University Institutional Review Board (MU-IRB) at the office of MU-IRB, Research Administration Division, Office of the President, Mahidol University, Tel 66-2-8496223-5, Fax 66-2-8496223.

I thoroughly read the details in this document.

Signature…… Participant

(.....)

Date…….....

Form of Informed and Voluntary Consent to Participate in Research

My name is……., aged…….years old, now living at the address no……..road/street…….…….. subdistrict/tambon……district/amphur……..….. province……Postal code…….…… Tel no……..

I hereby express my consent to participate as a subject in the research project(1) entitled **The perceptions of safe delivery among married women of reproductive age between 20 and 49 years old .**

In so doing, I am informed of the research project's origin and purposes; its procedural details to carry out or to be carried out; its expected benefits and risks that may occur to the subjects, including methods to prevent and handle harmful consequences; and remuneration, and expense. I thoroughly read the detailed statements in the information sheet given to the research subjects. I was also given explanations and my questions were answered by the head of the research project.

I therefore consent to participate as a subject in this research project (2).

On the condition that I have any questions about the research procedures, or on the condition that I(*) suffer from an undesirable side effect from this research, I can contact (Indicate the name of the person in charge who is 24-hour ready for contact by phone or pager.).

On the condition that I(*) am not treated as indicated in the information sheet distributed to the subjects, I can contact the Chair of Mahidol University Institutional Review Board (MU-IRB) at the office of MU-IRB, Research Administration Division, Office of the President, Mahidol University, Tel 66-2-8496223-5, Fax 66-2-8496223.

I am aware of my right to further information concerning benefits and risks from the participation in the research project and my right to withdraw or refrain from the participation anytime without any consequence on the service or health care I am to receive in the future. I consent to the researchers' use of my private information obtained in this research, but do not consent to an individual disclosure of private information. The information must be presented as part of the research results as a whole.

I thoroughly understand the statements in the information sheet for the research subjects and in this consent form. I thereby give my signature.

Signature..... Participants/ Proxy/ Date.....
(.....)
Signature..... Person in Charge of Informing and Requesting a Consent/ Head of (.....) Research Project/ Date.....

In case that the participant is not literate, the reader of all the statements for the participant is (Mr. /Mrs./Ms…….), who gives his/her signature as a witness.

Signature.....Witness/Date.....
(.....)

BIOGRAPHY

NAME	Khanthong Siharath
DATE OF BIRTH	July 3, 1959
PLACE OF BIRTH	Vientiane Capital. Lao PDR
INSTITUTION ATTENDED	Medicine University, Vientiane Capital, Lao People Democratic Republic Lao PDR Medical Doctor
FELLOWSHIP/ RESEARCH GRANT	United Nations Population Fund (UNFPA)
PRESENT POSITION	Medical Doctor Chief of Training Division , Mother and Child Health Center, Ministry of Health, Vientiane, Lao PDR.