

A PARTICIPATORY ACTION RESEARCH FOR IMPROVING MATERNAL HEALTH
THROUGH HEALTH EDUCATION PROGRAM WITH PICTORIAL HANDBOOK IN PAO
MINORITY GROUP, MYANMAR



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ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

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การวิจัยแบบมีส่วนร่วมเพื่อส่งเสริมสุขภาพมารดาโดยการให้คู่มือประกอบภาพการให้สุขศึกษาใน
ชนเผ่าปาอู ประเทศพม่า



นางสาว ทู ทู เกวอ เซา

ศูนย์วิทยทรัพยากร
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วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธาณสุขศาสตรดุษฎีบัณฑิต

สาขาวิชาสาธาณสุขศาสตร์

วิทยาลัยวิทยาศาสตร์สาธาณสุข จุฬาลงกรณ์มหาวิทยาลัย

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ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

ทู ทู เกวอ เซา :การวิจัยแบบมีส่วนร่วมเพื่อส่งเสริมสุขภาพมารดาโดยการใช้คู่มือประกอบภาพการให้สุขศึกษาในชนเผ่าปาอู ประเทศพม่า (A PARTICIPATORY ACTION RESEARCH FOR IMPROVING MATERNAL HEALTH THROUGH HEALTH EDUCATION PROGRAM WITH PICTORIAL HANDBOOK IN PAO MINORITY GROUP, MYANMAR) อ. ที่ปรึกษาวิทยานิพนธ์หลัก : ผศ.ดร.รัตนา สำโรงทอง, 169 หน้า.

ในประเทศพม่า ผู้หญิงประมาณ 1.3 ล้านคนให้กำเนิดบุตร จากข้อมูลของการสำรวจระดับประเทศ ในสาเหตุการตายของมารดา โดยกรมอนามัย ระหว่าง ปี คศ 2004 -2005 พบว่า อัตราการตาย ของมารดา เป็น 316 ต่อ100,000 โดยสาเหตุหลักของการตาย และการเจ็บป่วย เนื่องจากโรคแทรกซ้อนระหว่าง ตั้งครรภ์ และการคลอด ประเทศพม่าประชาชนกว่า ร้อยละ 70 อาศัยอยู่ในชนบท ซึ่งร้อยละ 89 ของการ ตายของมารดา เกิดในชนบท

การศึกษาคั้งนี้ดำเนินการใน 3 หมู่บ้านชนบท ของชนกลุ่มน้อยชาวปาอูก ซึ่งตั้งอยู่ในเมืองทาองยี รัฐฉาน ประเทศพม่า มีวัตถุประสงค์เพื่อ ประเมินประสิทธิผลของการให้การศึกษาด้านอนามัยแม่และเด็กโดยผ่านหนังสือรูปภาพ เพื่อส่งเสริมความรู้ ทักษะคิด และการปฏิบัติตน หรือความตั้งใจจะปฏิบัติตนเพื่อ สุขภาพอนามัยที่ดีของแม่และเด็กในเรื่องการฝากครรภ์ การคลอด การดูแลหลังคลอด การให้นมบุตร และ การวางแผนครอบครัว ของชาวปาอูก

โครงการการศึกษาคั้งนี้เน้นการให้ความรู้ด้าน การฝากครรภ์ การคลอด ในเรื่องอาการแทรกซ้อน โภชนาการ สุขอนามัย การรับวัคซีนบาดทะยัก การคลอดที่ปลอดภัย การตรวจหลังคลอด การให้นมบุตร และการวางแผนครอบครัว ซึ่งดำเนินการโดยอาสาสมัครหมู่บ้านที่ผ่านการอบรม โดยใช้หนังสือภาพที่ พัฒนาโดยใช้กระบวนการการมีส่วนร่วมของตัวแทนชุมชนเพื่อให้ได้หนังสือที่มีความสอดคล้องกับสังคม และวัฒนธรรมของชาวปาอูก การเก็บข้อมูลโดยวิธีการทั้งเชิงคุณภาพ และเชิงปริมาณ เพื่อประเมิน ประสิทธิภาพของโครงการ

ผลการศึกษาพบว่า ระดับความรู้ ทักษะคิด และความตั้งใจในการปฏิบัติตนเพื่อสุขภาพอนามัยที่ดี ของมารดา หลังการให้ความรู้โดยผ่านหนังสือภาพที่พัฒนาขึ้นมาสำหรับงานอนามัยแม่และเด็ก เพิ่มขึ้นอย่าง มีนัยสำคัญทางสถิติ นอกจากนี้การดำเนินการโครงการนี้ยังเป็นการสร้างความเข้มแข็งชุมชนในการค้นหา วิเคราะห์ จัดลำดับความสำคัญของปัญหาสุขภาพของผู้หญิง การวางแผน การจัดสรรทรัพยากร ดำเนินการ และประเมินผลโครงการ

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HTOO HTOO KYAW SOE: A PARTICIPATORY ACTION RESEARCH FOR IMPROVING MATERNAL HEALTH THROUGH HEALTH EDUCATION PROGRAM WITH PICTORIAL HANDBOOK IN PAO MINORITY GROUP, MYANMAR. ADVISOR: ASST PROF. RATANA SOMRONGTHONG, M.A., Ph.D., 169 pp.

Approximately 1.3 million women give birth each year in Myanmar and according to the “Nationwide Cause-specific Maternal Mortality Survey”, carried out by Department of Health in 2004-2005, maternal mortality ratio was estimated at 316 per 100,000 live births at the national level. The complications during antenatal and delivery periods were the main causes of maternal mortality and morbidity; and 80% of maternal deaths were mostly at home. More than 70% of the total population lives in rural areas where 89% of all maternal deaths were reported.

This study was carried out in three PaO villages which are located in Taunggyi Township, Shan State, Myanmar. The main purpose of this study was to evaluate the effectiveness of maternal health education program using pictorial maternal health education handbook for improving knowledge and attitude and practice/intention to practice regarding maternal health care in antenatal, delivery and postnatal period including breastfeeding and family planning among reproductive age women in PaO ethnic group in Myanmar.

Intervention program emphasized on giving health education on antenatal, delivery and postnatal care including breastfeeding and family planning conducted by village health volunteers using pictorial handbook which was developed in their social and cultural context. Participatory approach was used to develop the maternal health education program and both quantitative and qualitative methods were used to evaluate the effectiveness of maternal health education program.

The findings revealed that knowledge, attitude and intention to practice of maternal health care and health related behaviors were significantly increased after women’s group education sessions using pictorial maternal health education handbook.

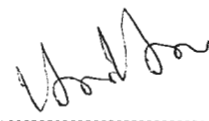
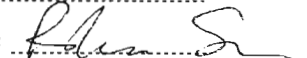
Moreover, the maternal health education program empowered the community representatives in identifying and analyzing the women’s health problem, developing action plans to address the priority problems, resource mobilization, having responsibilities in implementing, and evaluation of the health program.

Field of Study : Health System Development

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Student’s Signature

Advisor’s Signature

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ABBREVIATIONS

AMW	Auxiliary Midwife
ANC	Antenatal Care
CPR	Contraceptive Prevalence Rate
FGD	Focus Group Discussion
IUD	Intrauterine Device
IDI	In-depth Interview
MMCWA	Myanmar Maternal and Child Welfare Association
MMR	Maternal Mortality Rate
MW	Midwife
NGO	Non-government Organization
PNC	Postnatal Care
TBA	Traditional Birth Attendant
UNICEF	United Nations Children's Fund
UN	United Nations
UNFPA	United Nations Population Fund
VL	Village
VHV	Village Health Volunteer
WHO	World Health Organization

CHAPTER I

INTRODUCTION

1.1 Background

Improving women's health is the fifth Millennium Development Goal as adopted in September 2000 targeting to reduce, by 2015, maternal mortality in developing countries by three quarters which is 75% of the 1990 figure (UNFPA, 2006). Global ratio of maternal mortality is 400 maternal deaths per 100,000 live births in 2005 has barely changed since 1990 (WHO, 2005). Maternal mortality ratios range from 830 per 100,000 live births in African countries to 24 per 100,000 live births in European countries (WHO, 2005).

Among the developing countries, sub-Saharan Africa had the highest maternal mortality ratio (MMR) at 900 maternal death per 100,000 live births in 2005, followed by South Asia (490), Oceania (430), South-Eastern Asia (300), Western Asia (160), North Africa (160), Latin America and the Caribbean (130), and Eastern Asia (50) (WHO, 2007). In South-Eastern Asia, three countries (Cambodia, Lao PDR, and Myanmar) have high levels of maternal mortality, with over 300 deaths per 100,000 live births (UNFPA, 2006).

Maternal mortality is one of the greatest problems in the world (WHO, 1995). Every year, the estimated 211 million pregnancies occur (WHO, 2005) and about 529,000 mothers are still dying, mostly from avoidable causes (WHO, 2007). In 2005, of the estimated total of 536,000 maternal deaths worldwide, developing countries accounted for 99% which is 533,000 of the deaths, and in South Asia, 188,000 maternal death occurred (UNFPA, 2006).

Pregnancy and childbirth and their consequences are still the leading causes of death among reproductive age women. Over 300 million women in the developing world currently suffer from short-term or long-term illness brought about by pregnancy and childbirth. Between 11% and 17% of maternal deaths happen during childbirth itself and between 50% and 71% in the postpartum period. The lifetime risk of death due to pregnancy-related complications is 250-fold higher among women in developing than in developed countries (WHO, 2005).

Women die from a wide range of complications in pregnancy, childbirth or the postpartum period; however, the four major killers are: severe bleeding (mostly bleeding postpartum), infections (also mostly soon after delivery), hypertensive disorders in pregnancy (eclampsia) and obstructed labour. Globally, about 80% of maternal deaths are due to these causes and complications after unsafe abortion comprises 13% of maternal deaths. Among the indirect causes (20%) of maternal death are diseases that complicate pregnancy or are aggravated by pregnancy, such as malaria, anaemia and HIV (WHO, 2009).

Of the 136 million women who give birth each year, some 20 million experience pregnancy-related illness after birth (WHO, 2005). And every year, maternal morbidity is estimated to be more than 50 million throughout the world (WHO, 1995). Even though the prevalence of the pregnancy related morbidities has not been well documented in East and South East Asian region, maternal morbidity is estimated to be thirty times the number of maternal deaths. Anemia, reproductive tract infections and depression are common short-term morbidities (UNFPA, 2006). Maternal morbidity is a public health problem that affects nearly 1.7 million women annually, can have an impact on fetal and infant health, and can lead to maternal death (Medscape Today, 2009).

ANC and PNC services are key health interventions for reducing maternal and newborn morbidity and mortality (Mrisho M, et al, 2009). In the decades from 1990 to 2000 women were increasingly likely to have at least one antenatal visit (Francisco A, et al, 2007). Worldwide, over 70% of women have at least one antenatal visit with a skilled provider during pregnancy. In the industrialized countries, coverage is extremely high with 98% of women having at least one visit; however, in the developing world, antenatal care use is around 68% (WHO, 2003). An estimated 35% of pregnant women in developing countries have no contact with health personnel prior to giving birth (UNFPA, 2009). The region of the world with lowest level of use is South Asia, where only 54% of pregnant women have at least one antenatal care visit. Not surprisingly, there are marked urban rural differentials in use of antenatal care and women living in urban areas are generally twice as likely as those living in rural areas. In Asia, some 51% of women in urban areas report four or more antenatal

visits when the women in rural areas only 26% report four or more visits (WHO, 2003).

The postnatal care is one of the most important maternal health services for not only prevention of impairment and disabilities but also reduction of maternal mortality, however, period of six weeks after delivery has often been neglected. Seven out of ten women do not receive any postpartum care, based on Demographic and Health Surveys conducted in 30 low income countries between 1999 and 2004. Utilization of postnatal care by women influences both women and children's lives, in terms of reducing repeat pregnancies and increasing effective contraceptive use. Therefore the proper understanding of the utilization of postnatal health care during the postnatal period can reduce maternal mortality (Dhakal S, et al. 2007).

Even over half a million encounter complications due to child birth annually and may die (Annet N, 2004), fewer women have the birth attended by a skilled health worker. 45 million home deliveries each year are not assisted by skilled health personnel and less than two thirds (62%) of women in developing countries receive assistance from a skilled health worker when giving birth. Among the middle to low income countries, while 93% of delivery is attended by skilled personnel in South America, only 34% of women in Eastern Africa are assisted during delivery (WHO, 2009). It is known that having a skilled attendant at every delivery can lead to marked reductions in maternal mortality and morbidity (Mpembeni RNM, et al. 2007).

Worldwide, it is estimated that only 34.8% of infants are exclusively breastfed for the first months of life, the majority receiving some other food or fluid in the early months (WHO, 2009). Although the initiation and duration of breastfeeding declined worldwide in most of the twentieth century, in the past two decades, breastfeeding initiation and duration began to increase in many developing countries (WHO, 2003). Between 1996 and 2006, the rate of exclusive breastfeeding for the first 6 months of life increased from 33% to 37% (Baker EJ, et al, 2006).

Breastfeeding can benefit both mother and infant not only it helps protect babies and young children against dangerous illnesses but also creates a special bond between mother and child. For mother, exclusive breastfeeding can give more than 98 per cent protection against pregnancy for six months after giving birth – but only if

her menstrual periods have not resumed, if her baby breastfeeds frequently day and night, and if the baby is not given any other food or drinks, or a pacifier or dummy (UNICEF, 2002). Furthermore, WHO documented that a greater chance of dying from infectious diseases throughout the first year of life for non-breastfed infants. In the first two months of life, non-breastfed infants had an almost six-fold greater risk of dying from infectious diseases than breastfed infants (Baker EJ, et al, 2006). Non-exclusive breastfeeding in the first 6 months of life, results in 1.4 million deaths and 10% of the disease burden in children younger than 5 years (WHO, 2009).

Contraceptive use reduces maternal mortality and improves women's health by preventing unwanted and high risk pregnancies and reducing the need for unsafe abortion (Working group on factors affecting contraceptive use, National Research Council). Primary prevention of maternal deaths can be achieved by reducing the number of unwanted pregnancies and it is estimated that if unmet needs for contraception were met, maternal mortality would drop by 20 to 30 per cent by reducing pregnancies (UNFPA, 2006). One in three of all deaths related to pregnancy and childbirth could be avoided if women who wanted effective contraception had access to it. Some 200 million women of child bearing age want to delay or avoid pregnancy, but 137 million uses no method of contraception at all, and 64 million use less effective traditional methods (UNFPA, 2009).

In the countries of East and South-East Asia, there are marked disparities in maternal health between rich and poor, rural and urban and different ethnic groups within the country. Remote rural area and the poor women have less access to emergency and essential obstetric care due to several obstacles such as cost, lack of facilities and lack of information (UNFPA, 2006).

Myanmar is one of the South-East Asia countries and it is located on Western edge of Indo-China peninsular. It shares the border with China, Thailand, Laos PDR, Bangladesh and India. Myanmar is divided administratively and geographically into 14 states and divisions, which are again sub-divided into 65 districts (Aye HH, 2007). There are about 135 ethnic groups are living in the highlands and eastern and western borders of Myanmar (Ministry of Health Myanmar, 2009). More than 70% of the total population lives in rural areas and the lowland delta and central dry zone are highly populated areas (WHO, 2009). The total population in 2003-2004 is estimated at

53.22 million (Ministry of Health Myanmar, 2005) with a population growth rate of 2.02 per cent (Country Profile Myanmar, 2000) and female comprises 50.28 percent (Ministry of Health Myanmar, 2005). In Myanmar, over 60% of the total population constitutes mother and children who are the most vulnerable group (WHO, 2009).

Approximately 1.3 million women give birth each year in Myanmar (WHO, 2009) and according to the “Nationwide Cause-specific Maternal Mortality Survey”, carried out by Department of Health in 2004-2005, maternal mortality ratio was estimated at 316 per 100,000 live births at the national level. 89% of all maternal deaths were reported from the rural areas and the complications during antenatal and delivery periods were the main causes of maternal mortality and morbidity; and 80% of maternal deaths were mostly at home (Ministry of Health and Ministry of Social Welfare, Relief and Resettlement, 2008).

Seventy three per cent of women received antenatal care (ANC) from a trained provider, most commonly from a nurse or midwife. The average number of ANC visits during pregnancy was five, with 40 per cent of women making three to five ANC visits (Ministry of Health and Ministry of Social Welfare, Relief and Resettlement, 2008). The percentage of postnatal women receiving 6 or more contacts for postnatal care is 56.4%, in 2005, up from 51.4% in the base year 2002. However, there is an urban-rural difference as 8.6% of postnatal women were practicing postnatal care in rural (UNICEF Myanmar, 2005).

The rate of deliveries attended by doctors, nurses and midwives (skilled birth attendants) is 57 per cent. Thirty nine per cent of deliveries are attended by traditional birth attendants, but this is much higher in rural areas, where TBA attended births account for 45.3 per cent of deliveries. Most deliveries occur at home, with 56.6 per cent of deliveries occurring at home in urban areas and 91.2 per cent at home in rural areas (UNFPA, 2006).

The contraceptive prevalence rate (all methods) of married women of reproductive age rose from 16.8 per cent in 1991, 32.7 per cent in 1997, to 37 per cent in 2001. The CPR for modern methods is 32.8 per cent. However, the unmet need has been estimated at 17 per cent in 2001, but would be higher if the needs of unmarried women were included (UNFPA, 2006). Among the married women, the unmet need

for birth spacing remains significant with the total of 20% who want to limit their births or to delay their next pregnancy (WHO, 2007).

The UNFPA special program of assistance implemented public health related project in 86 townships in Myanmar covering more than 30 percent of the population for the period 2002-2005. A Reproductive Health Baseline Community Survey (RHBCS) was conducted for the assessment of reproductive health related information in 36 sample townships in 14 States and Divisions by the Department of Health Planning in 2001 and 2005 and from this survey, the proportion of men and women who can identify 4 or more contraceptive methods is 37.3% in 2005, up from 31.8% in 2002 was revealed (UNICEF Myanmar, 2005).

Myanmar Maternal and Child Welfare Association is a voluntary social organization (NGO) that is working to enhance the health, education and living standards of mothers and children in Myanmar by setting up village food banks in villages and townships, opening community nutrition centers, initiating a growth monitoring program to ensure nutrition of children, carrying out education program for mothers on nutritious cooking and demonstration of cooking techniques, conducting training courses, and giving supplements for iodine deficiency, iron-deficiency, vitamin-A deficiency and other conditions caused by malnutrition (MMCWA, 2005).

However, only 50% of the whole country is covered with Safe motherhood activities (162 townships) which points out that emergency obstetric care activities is needed to be implemented (Ministry of Health and Ministry of Social Welfare, Relief and Resettlement, 2008).

1.2 Rationale of the study

Shan State is located in east central region of Myanmar and the population was estimated at 4.8 million in 2000. There are 11 townships, 1626 village groups and 15513 villages in Shan State. The ethnic groups residing in the Shan State are Shan, Bamar, Chinese, Wa, Kachin, Danu, Intha, Palaung, Pa-O, Taunggyo and Indians. Taunggyi township is located in Taunggyi district which is situated in southern Shan State. The indigenous population in Taunggyi township is Pa-O and Intha; and in addition to that, there is a significant population of Shans, Bamars, other native minorities, as well as Chinese and Burmese Muslims. There are language, cultural and geographical barriers in providing access to the ethnic groups, often living in remote areas (UNFPA, 2006).

The survey done among selected communities in Eastern Myanmar revealed that the mean age at marriage and first pregnancy was 20.8 years and 11.8% of the women reported being married by the age of 16 years. Antenatal care was provided in the last pregnancy to 39.3% of the women and 87.6% delivered at home. 93.7% reported early initiation of breast feeding but exclusive breastfeeding was less common. From that survey, it was revealed that in selected communities in Shan State, only 13.6% of women were attended by skilled health personnel at birth such as doctors, nurses or midwife; however the primary attendant was traditional birth attendant (TBA) which comprised 61.9%. 49.3% of the Shan women were provided postnatal care and 16.5% of women had exclusive breastfeeding for 6 months and unmet need of family planning was observed at 37.5% (Mullany LC, et al, 2008).

PaO is the second largest ethnic group residing in Shan State comprising 12.5% (approximately 600,000 populations) of total population in Shan State. This study was carried out in 3 PaO villages which are Tee Lone, Lone Chin, and Lone War (Kyout Ngat) villages located in Taunggyi Township, Shan State. The total population in these 3 villages is about 1400 and children under 5 years and reproductive age women comprises of 40%. Most of the habitats are farmer and they grow rice and sebesten leaves. They have little education and most are illiterate; most only speak the Pa O language and there are few people who can speak Burmese language. The average family income is about US\$ 200 per year and there is no access to electricity in these villages. Population in these isolated villages have had

little contact with those from outside the area and are strongly self-reliant. The people are poor, living under a repressive regime and have almost no opportunity to make things better for themselves.



Figure 1: Map of Shan State, Myanmar

Source: Wikipedia, 2009

The village health resource is the rural health centre which is located in Pha Mon village and the approximate time taken to reach the rural health center is about 30-45 minutes by walk. There is one midwife working in rural health centre who not only do pre-natal care and are in charge of deliveries, but they also perform a variety of other health-related services, such as giving immunizations, taking care of emergency cases, treating common diseases for the whole family, providing micronutrient and food supplements and promoting hygiene and sanitation. Even though at present the ratio of midwifery skilled providers (including AMW) to village is 1:2 in Myanmar and the national target is at least one midwifery skilled person to every village (WHO, 2009), midwife in this area has to take responsibility for 14 villages and an auxiliary midwife in Tee Lone Village is volunteering antenatal care, deliveries, postnatal check-up and treating minor illnesses.

Due to the distance from rural health center, the community mostly depends on TBAs and auxiliary midwife for antenatal, delivery and postnatal care. The villagers seek midwife when risk conditions and serious complications occur. Midwife usually refers to township hospital (Sat San Tun Hospital which is about one and half hours away by car) for serious cases; however, the villagers sometimes seek traditional healers and quacks in the near villages.

Training session with the traditional birth attendants from 7 PaO villages was done in 2009 and it provided the cursory understanding of the women's knowledge and practices. Most of the women in the villages have little health knowledge on prenatal care, delivery and postnatal care. Lack of information, education, communication and counseling services regarding birth spacing and family planning makes them little knowledge, misconception of usage of birth spacing and its different methods. Importantly, by WHO standards, TBAs in this community would be referred to as "unskilled birth attendants" and even though with little scientific knowledge of pregnancy and labor/delivery and few assessment skills, they are the only care providers for a large population of women in PaO villages.

In order to save women's lives from preventable causes of maternal death, crucial information is needed so that the most effective and efficient treatment can be organized. This information consists of whether women are aware of the danger signs of pregnancy-related complications, whether they know that they need treatment, whether health facilities are available and accessible, and whether women receive adequate treatment at the health facilities (WHO, 2003).

As the women's empowerment factors such as education and exposure to mass media play a major role in the utilization of maternal health care (Yesudian PP. 2005), health education to mothers is a strategy which many countries have adopted to improve maternal health (Annet N, 2004). Thus, women should be informed about danger signs and symptoms, plans made for skilled attendance and information given on contraception (UNFPA, 2006).

Sometimes the decisions making to seek medical care for women were done by their husbands, family members or community members except for a few women who are educated and can make up the decision by themselves (Annet N, 2004). In reproductive health, the male involvement discussion has developed mainly around

contraceptive use, STDs and HIV. Role of men in safe motherhood initiatives is also becoming a big challenge for making women's world better as they are the main decision maker. However, mother-in-law, traditional family beliefs, religious beliefs and misconceptions in society are other important factors which would limit the utilization of maternal health care services. Therefore, not only women, but also families and communities also need information and education to be empowered to contribute positively to making pregnancy safer (Anya SE, et al, 2008).

Therefore, the issue addressed in this study is what would be appropriate to develop participatory maternal health education program using pictorial maternal health education handbook in order to enable the women including illiterate women in the community aware of the danger signs of pregnancy-related complications, whether they know that they need treatment, plans made for safe and clean delivery and skilled attendance and access to information on contraception.



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1.3 Research Questions

- What are the knowledge, attitude and practice/intention to practice regarding maternal health care in antenatal, delivery and postnatal period, breastfeeding and family planning of reproductive age women of PaO ethnic group in Myanmar?
- Will introduction of participatory maternal health education program using pictorial maternal health education handbook through participatory action research improve knowledge, attitude and practice/intention to practice of maternal health care in antenatal, delivery and postnatal period including breastfeeding; and family planning among women of reproductive age in PaO ethnic group in Myanmar?

1.4 Research Objectives

1.4.1 General Objective

- To determine the effectiveness of participatory maternal health education program through participatory approach using pictorial maternal health education handbook for improving knowledge and attitude and practice/intention to practice regarding maternal health care in antenatal, delivery and postnatal period including breastfeeding and family planning among reproductive age women in PaO ethnic group in Myanmar.

1.4.2 Specific Objectives

- To assess the knowledge, attitude and practice/intention to practice regarding maternal health care in antenatal, delivery and postnatal period, breastfeeding and family planning among reproductive age PaO women in Myanmar.
- To develop appropriate pictorial maternal health education handbook tailoring PaO ethnic group in Myanmar through participatory approach.
- To train village health volunteers for distributing knowledge regarding maternal health care in antenatal, delivery and postnatal period, breastfeeding and family planning which in turns promoting maternal health in PaO ethnic group in Myanmar.

- To measure community participation to participatory maternal health education program in Shan, Myanmar.
- To evaluate the effectiveness of health education program for improving knowledge, attitude and practice regarding maternal health care in antenatal, delivery and postnatal period, breastfeeding and family planning in PaO ethnic group in Myanmar.

1.5 Research Hypothesis

- The participatory maternal health education program using pictorial education handbook tailoring PaO minority group through PAR approach will increase knowledge, attitude and practice/intention to practice regarding maternal health care in antenatal, delivery and postnatal period, breastfeeding and family planning among reproductive age women.

1.6 Operational Definitions

“Reproductive age women” refer to all women aged between 15 to 49 years (WHO).

“Knowledge” refers to the women’s ability to answer the danger signs during pregnancy, delivery, and postnatal period, knowledge about antenatal care, safe and clean delivery, postnatal care, breastfeeding and contraception.

“Attitude” refers to the respondent’s opinion of agreement or disagreement to the statement concerning antenatal care, postnatal care, safe and clean delivery, breastfeeding and contraception.

“Practice/Intention to practice of early antenatal visit” refers to the women’s practice/intention to practice the pregnancy-related health care within the first three months (first trimester) of her pregnancy for identifying the general health problems of mother that need to be treated, raising awareness of danger signs to look for during pregnancy and also addressing the special nutritional needs of pregnant women (UNFPA, 2006) (Council on children and families, 2009).

“Practice/Intention to practice of at least 3 antenatal visits” refers to the women’s practice/intention to practice of at least 3 antenatal visits before deliver the baby.

“Practice/Intention to practice of delivery by skilled birth attendant” refers to women’s practice/intention to practice the child birth assisted by an accredited health professionals such as trained traditional birth attendants, auxiliary midwife, 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 (UNFPA, 2009).

“Practice/Intention to practice of postnatal visit” refers to the women’s practice/intention to practice the care which is assistance given to a mother for a period of six weeks from the time of delivery in order to ensure mother’s physical and mental health and well being (WHO, 1998).

“Practice/Intention to practice of early initiation and exclusive breastfeeding” refers to the women’s practice/intention to breastfeed the newborn only with the mothers’ breast milk, with no other food or water started within first 1 hour after delivery (Baker EJ, 2006).

“Practice/Intention to practice of exclusive breastfeeding” refers to the women’s practice/intention to breastfeed the infant aged less than four months only with breast milk and no other solids or liquids, including water, with the exception of drops or syrups consisting of vitamin or mineral supplements or medicines (Baker EJ, 2006).

“Usage of contraception” refers to the continuous use of contraception within last three months until the time of interview and use at least one method, traditional method or modern method such as pills, injections, IUD, condom, female sterilization, male sterilization, Norplant implants, diaphragm, withdrawal, fertility awareness and abstinence either used by the women or her husband (Soe HHK, 2007).

“Intention to use contraception” refers to the women’s intention to use any method of contraception either modern or traditional methods.

“Pictorial maternal health education handbook” refers to the health education handbook which includes health messages regarding maternal health care, breastfeeding and family planning and it is developed in culturally and locally

appropriate terms with illustrations suitable for PaO ethnic group and illiterate women.

“Predisposing factors” refer to the factors leading to motivation to practice including the women’ knowledge and attitudes toward maternal health during antenatal, delivery and postnatal period including breastfeeding and contraception and socioeconomic characteristics such as age, education, occupation, total family income, number of pregnancy, and number of living child.

“Enabling factors” refers to the availability and accessibility to maternal health education service such as women’s group health education, and health education pamphlets and handbooks.

“Reinforcing factors” are the factors associated with community. Those may either encourage or discourage the women in changing their practice. Thus, reinforcing factors include community’s support and village health volunteers’ support which come from participation of village leader, village health committee, auxiliary midwives and training of village health volunteers.

“Community participation” represents the number of participants engaged in discussion sessions on the identification and analysis of problems of maternal health; the purpose of meeting to establish and set the priority of activities concerning the solutions to problems of maternal health; the implementation of each activities, and their monitoring and evaluation.

“Availability of maternal health education materials” refers to the presence of health education pamphlets and handbook within the community.

Accessibility

WHO (1998) defines accessibility is a continuous supply of care that is geographically, culturally and financially within the easy reach of whole community.

1. Geographical accessibility means the distance, travel time, and means of transportation are acceptable to people.
2. Financial accessibility means whatever the methods of payment used and the services are affordable for the community and the country.

3. Culturally accessibility means technical and managerial method used are in line with the cultural patterns of the community.

In this study, “**accessibility to maternal health education service**” refers to the ability of using the existing maternal health education in terms of distance, cost for health education service and health education handbook and materials used which are developed in culturally appropriate terms.

1.7 Conceptual Framework

The conceptual framework of this study is presented in figure 2.



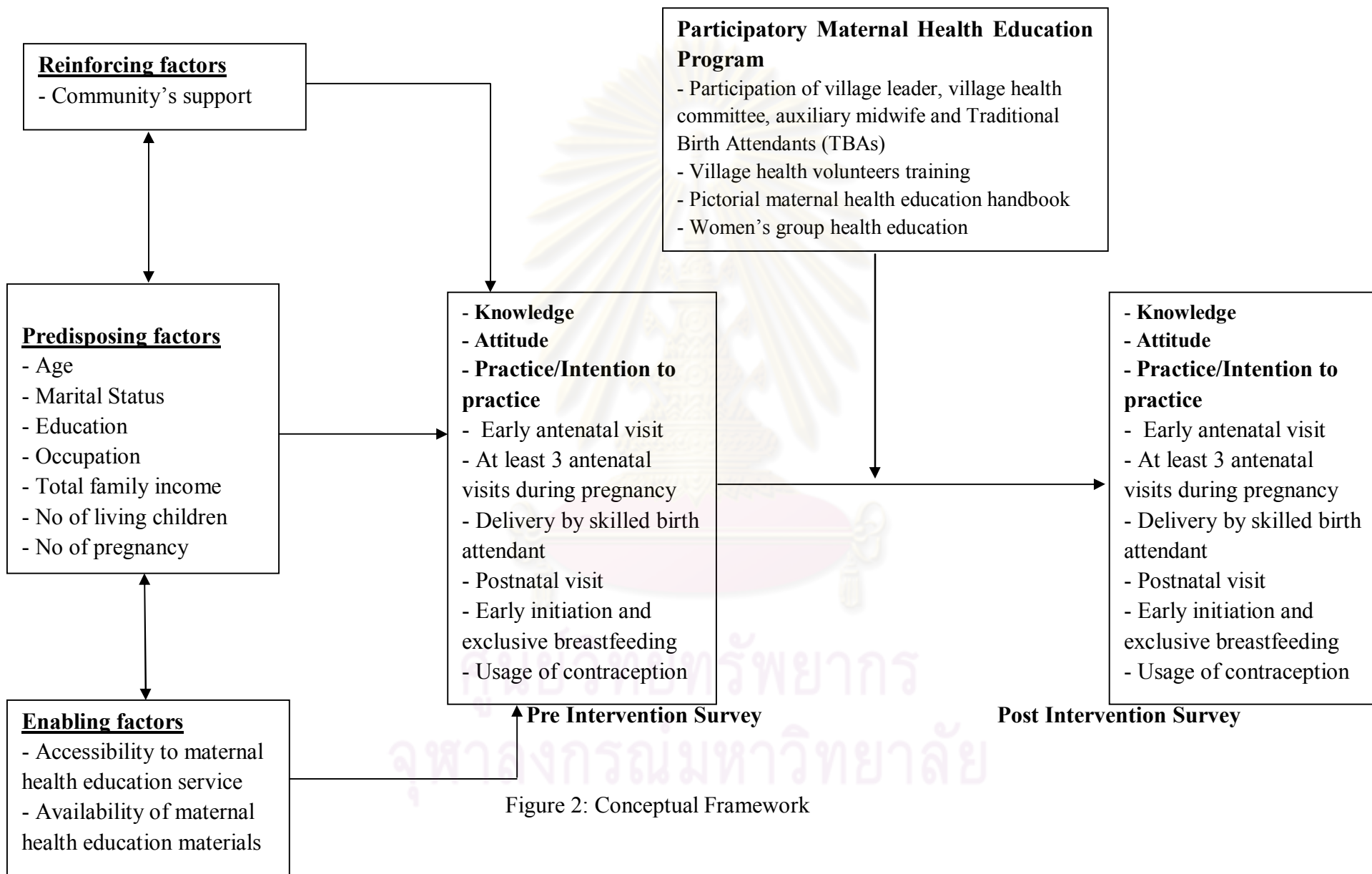


Figure 2: Conceptual Framework

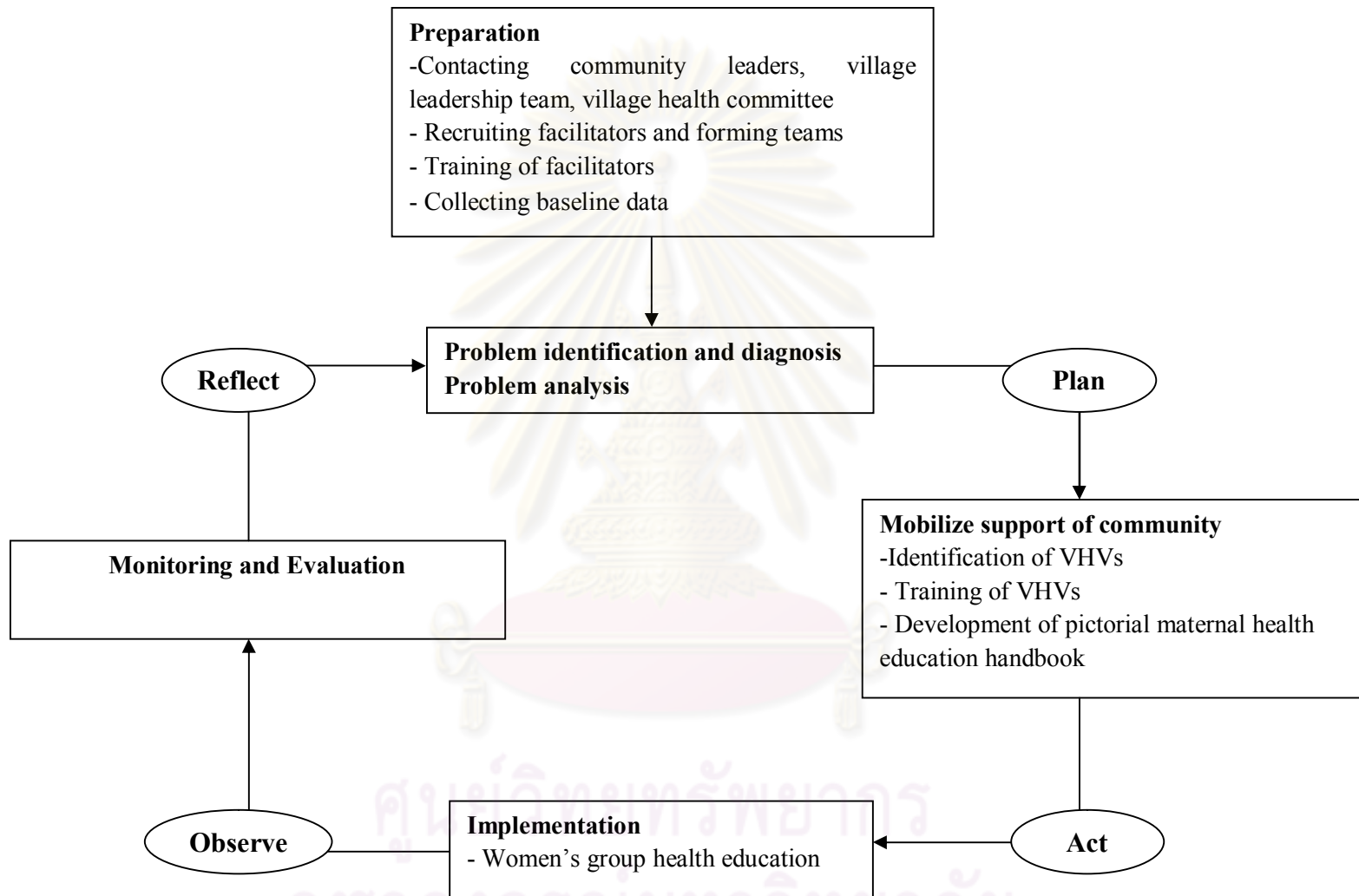


Figure 3: Participatory Maternal Health Education Program
(Adopted from World Bank, 2000)

CHAPTER II

LITERATURE REVIEW

2.1 Millennium Development Goals (MDGs)

At the Millennium Summit in September 2000, the United Nations Millennium Development Goals was agreed by all 191 UN member states to try to achieve by the year 2015.

The Eight Millennium Development Goals are:

1. to eradicate extreme poverty and hunger;
2. to achieve universal primary education;
3. to promote gender equality and empower women;
4. to reduce child mortality;
5. to improve maternal health;
6. to combat HIV/AIDS, malaria, and other diseases;
7. to ensure environmental sustainability; and
8. to develop a global partnership for development (WHO, 2009)

Since the late 1980s, improving maternal health and reducing maternal mortality have been key concerns of several international summits and conferences, including the Millennium Summit in 2000 (WHO, UNICEF, UNFPA & The World Bank, 2007). Out of the eight Millennium Development Goals, goal 5 addresses maternal health, measured by the indicators of maternal mortality ratio and percentage of deliveries attended by a skilled birth attendant (UNFPA, 2006). Within the MDG monitoring framework, the international community committed itself to reducing the maternal mortality ratio (MMR), and set a target of a decline of three quarters between 1990 and 2015 (WHO, UNICEF, UNFPA & The World Bank, 2007)

2.2 Concept of Maternal Health Care

2.2.1 Antenatal care

Antenatal care started out in the first half of the 20th century as a means to educate “ignorant” women with an emphasis on the welfare of the infant and child (WHO, 2005). A key objective of maternal health care programmes has been to ensure that women present for antenatal care early in pregnancy in order to allow enough time for essential diagnosis and treatment regimes such as treatment of STIs and management of anemia (WHO, 2003).

WHO recommended that antenatal care for the majority of normal pregnancies should consist of four antenatal care assessments by or under the supervision of a skilled attendant during pregnancy (WHO, 2003) and be spaced at regular intervals throughout pregnancy, commencing as early as possible in the first trimester (WHO, 2007).

Antenatal care includes all care given to pregnant women. The WHO recommends that pregnant women should have four antenatal visits for:

- a) *Health promotion*: advice on nutrition and healthcare, as well as counseling to alert women to signs of danger and give them a help plan for the birth;
- b) *Assessment*: history taking, physical examination, and screening tests such as HIV, STDs, chronic, and hereditary diseases;
- c) *Prevention*: early detection and management of complications, and where needed, prevention of malaria, hookworm and tetanus; and
- d) *Treatment*: management of sexually transmitted diseases, anaemia, or other conditions. (Annet N, 2004)

A key component of antenatal care is the development of a birth and emergency plan, acknowledging that it is not possible to predict most of the complications at delivery and providing information about danger signs and symptoms, plans made for skilled birth attendance and contraception (UNFPA, 2006).

Firstly, the antenatal care offers an opportunity to establish a birth plan which includes planning the desired place of birth, the preferred birth attendant and birth companion, and finding out the location of the closest appropriate care facility (WHO, 2005). Across all developing countries, skilled professional assistance at delivery is six times more common for women who had at least one antenatal care visit than for

women who had none, three times more common for women who had four or more visits than for women who had fewer visits (WHO, 2003).

In addition, antenatal care also involves securing funds for birth-related and emergency expenses, finding transport for facility-based birth and identifying compatible blood donors in case of emergency. Birth planning has been used in many developed countries for more than a decade with beneficial effects, and has been introduced with success in developing countries as well, albeit on too limited a scale so far (WHO, 2005).

Secondly, the antenatal care consultation is an opportunity to prepare mothers for parenting and for what will happen after the birth. Women and their families can learn how to improve their health and seek help when appropriate, and, most importantly, how to take care of the newborn child. Advice on parenting skills is particularly important for pregnant adolescents and women with low self-esteem, and can improve the care that newborns and children will receive in the future. It helps to build a healthy family environment that is responsive to the child's needs (WHO, 2005).

While antenatal care does not directly reduce maternal mortality rate (MMR), it does contribute to maternal and child health (UNFPA, 2006). Antenatal care is not just a way to identify women at risk of troublesome deliveries (WHO, 2005); however, antenatal consultations offer an opportunity to promote healthy lifestyles that improve long-term health outcomes for the woman, her unborn child and possibly her family (WHO, 2005).

2.2.2 Delivery

For anyone who has been through the experience, or seen someone else go through it, there is no doubt that childbirth is a life-changing event. Unfortunately, as wonderful and joyful experience as it is for many, it can also be a difficult period, bringing with it new problems as well as the potential for suffering. In the most extreme cases the mother, or the baby, or both, may die (WHO, 2005).

Delivery care is the care given to a woman during the delivery/labor period. WHO recommends a skilled attendant at every birth in order to:

- a) Provide good quality care on an ongoing basis and the care should be hygienic, safe and sympathetic;
- b) Recognize and manage complications, including life-saving measures for the mother and baby; and
- c) Refer the mother promptly and safely when care at higher-level is needed. (Annet N, 2004)

When in many developed countries labour went from a natural process to a controlled procedure, the place of birth changed from home to hospital. On the other hand, in many developing countries, great distances between women and the health facilities restrict options and make home birth the only choice. Although risk assessment may be appropriately performed by trained birth attendants their advice about the place of birth, made on the basis of such assessment, is not always followed. Many factors keep women away from higher level health facilities. These include the cost of a hospital delivery, unfamiliar practices, inappropriate staff attitudes, restrictions with regard to the attendance of family members at the birth and the frequent need to obtain permission from other (usually male) family members before seeking institutional care (WHO, 1996).

A woman should give birth in a place she feels is safe; however, it must be a place where all the attention and care are focused on her needs and safety. A properly attended home birth does require a few essential preparations. The birth attendant must make sure that there is clean water at hand and that the room in which the birth takes place is warm. There is a need for careful hand washing, warm clothes or towels must be ready to wrap around the baby to keep it warm. There must also be at least some form of clean delivery kit as recommended by WHO in order to create as clean

a field as possible for birth and to give adequate treatment to the umbilical cord (WHO, 1996).

For both mother and baby, childbirth can be the most dangerous moment in life. Most of the deaths and disabilities attributable to childbirth are avoidable, because the medical solutions are well known (WHO, 2005). Skilled attendance at all births is considered to be the single most critical intervention for ensuring safe motherhood, because it hastens the timely delivery of emergency obstetric and newborn care when life-threatening complications arise (UNFPA, 2009). Immediate and effective professional care during and after labour and delivery can make the difference between life and death for both women and their newborns, as complications are largely unpredictable and may rapidly become life-threatening (WHO, 2005).

Percentage of births that are assisted by skilled birth attendants is the second indicator which is more useful to measure the progress towards MDGs. The global target for deliveries by skilled birth attendants is 90 per cent by 2015 with a target of at least 60 per cent for countries with high MMRs (UNFPA, 2006).

Both maternal and neonatal mortality are lower in countries where mothers giving birth get skilled professional care, with the equipment, drugs and other supplies needed for the effective and timely management of complications (WHO, 2005). In early 20th century, the industrialized countries halved their maternal mortality by providing professional midwifery care at childbirth (WHO, 2005). During the period 1990-2000, there was an increase in deliveries by skilled birth attendants of 36 per cent in East Asia and 64 per cent in South-East Asia (UNFPA, 2006). Figure 4 shows the maternal mortality ratio and percentage of births attended by skilled birth attendants in the ESEA region countries.

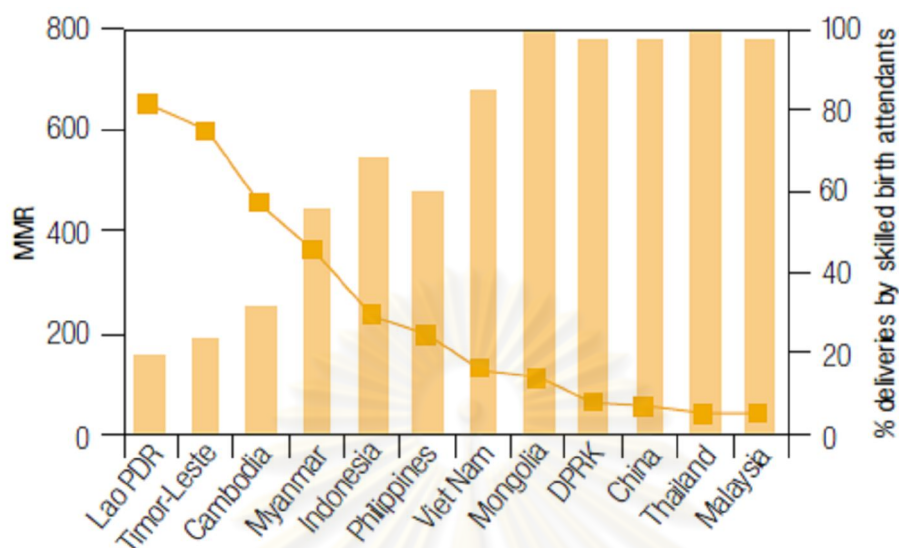


Figure 4: Maternal mortality ratios and percentage of births attended by skilled birth attendants

Source: UNFPA, 2006

2.2.3 Postpartum care (Postnatal care)

The postnatal period (or called postpartum, if in reference to mother only) is defined by the WHO as the period of beginning one hour after delivery of placenta and continuing six weeks (42 days) after the birth of an infant (WHO, 1998). By six weeks after delivery, most of the changes of pregnancy, labor and delivery have resolved and the body has reverted to the non-pregnant state. The post partum period is a very special phase in the life of a woman because her body needs to heal and recover from pregnancy and childbirth. A good postpartum care and well balanced diet during puerperal period is very important for the health of a woman (Liu N, et al, 2006).

Almost 40% of women experience complications after delivery and an estimated 15% of these women develop potentially life-threatening problems (Annet N, 2004). Despite the fact that the majority of maternal deaths and morbidities occur in this period and early neonatal death rates are high, period of six weeks after delivery has often been neglected (UNFPA, 2006). Post natal care services have an essential goal of ensuring a healthy mother and baby. When the baby is six weeks old, the mother's physical and emotional health is checked. In particular, the mother is

examined for symptoms of anemia, urinary tract infection, or of emotional distress or depression. In addition, breasts, abdomen and pelvic are examined to ensure that involution is complete and that any trauma sustained during delivery is fully healed. The other issues discussed during a postnatal care visit include contraceptive needs and methods (Hove I, et al, 1999).

Many of the non fatal pregnancy complications that the eight million women in developing countries suffered from over five years ago could have been prevented through postnatal care. Usually, morbid events gradually decline after delivery without clinical intervention. The rate at which they decline is very slow and can be accelerated by giving treatment to mothers when they visit the post natal care service (PNC) (Hove I, et al, 1999).

Postnatal care refers to the care given to a woman six weeks after delivery. WHO recommends integrated postnatal care that includes:

- a) Identification and management of problems in the mother and the newborn
- b) Counseling, information and services for family planning
- c) Health promotion for the newborn and mother, including immunizations, advice on breastfeeding, and safe sex. (Annet N, 2004)

Postnatal care is one of the most important maternal health care services for not only prevention of impairment and disabilities but also reduction of maternal mortality. Utilization of postnatal care by women influences both women and children's lives, in terms of reducing repeat pregnancies and increasing effective contraceptive use (Dhakal S, et al. 2007).

2.2.4 Family planning

"It is estimated that 100,000 maternal deaths could be avoided each year if all women who said they want no more children were able to stop childbearing" (WHO, 1994).

Over the past 25 years the world has experienced a contraceptive revolution. Contraceptive prevalence—the percentage of women of reproductive age, married or living in union, that use some type of contraceptive method—has risen from less than 10 percent around the world in the early 1960s to an estimated 55 percent in the late 1980s and early 1990s. This increase is by no means limited to the developed

countries. Although prevalence levels are higher in the industrial than in the developing world (72 versus 51 percent), it is noteworthy that more than half the women of reproductive age in developing countries currently use some form of contraception (UNFPA, 2009).

Contraceptives provide a safe and effective way to regulate fertility and preserve health. A variety of methods are available--both permanent and reversible, long-acting and short-acting, and methods for women and men. When used properly and consistently, contraceptives can provide substantial protection against pregnancy (WHO, 1994).

Pregnancy is particularly risky to certain groups of women – very young women, older women, women with more than four children, and women with existing health problems. If all high risk pregnancies were prevented, maternal mortality could be reduced by up to 25 percent.

The harmful effects of pregnancies too close together are well recognized. Birth-to-pregnancy intervals of 6 months or shorter are associated with a higher risk of maternal mortality (WHO, 2009). A woman's body needs two years to recover fully from pregnancy and childbirth. The risk to the mother's health is therefore greater if births come too close together. The mother needs time to get her health, nutritional status and energy back before she becomes pregnant again (UNICEF, 2002). For that matter, couples should be advised to wait at least 24 months after a live birth and 6 months after a miscarriage before attempting the next pregnancy (WHO, 2009).

The risk of maternal death increases for each successive birth after the fourth; the risk is 1.5 to 3 times higher for women with five or more children than for women with two or three children. Pregnancy and childbirth is riskier for these women as they are more likely to suffer from anaemia, require blood transfusions during delivery, and die of haemorrhage than women with fewer children. (WHO, 1994).

Contraceptive use also can help improve women's status and quality of life. Access to contraceptives allows women to decide the number and spacing of their children. Women with smaller, healthier families are likely to have increased opportunities for participation in educational, economic, and social activities (WHO, 1994).

2.2.5 Breastfeeding

Breastfeeding is an extension of maternal protection that transitions the young infant from the shelter of the in utero environment to life in the ex utero world with its variety of potentially harmful exposures (WHO, 2003).

WHO and UNICEF launched the “baby-friendly hospital” initiation in 1989; according to this policy, exclusive breast-feeding is promoted by the initiation of breast-feeding during the first hour after delivery, the avoidance of water or any supplementary feeding (Li L, et al, 2002). Exclusive breastfeeding for six months is recommended as one of the global strategy (WHO, 2009) and scientific evidence has guided the development of international recommendations for optimal infant feeding practices, which include exclusive breastfeeding for 6 months (breast milk only with no other liquids or foods given) and continued breastfeeding up to 2 years (WHO, 2003).

Global monitoring indicates that only 39% of all infants world-wide are exclusively breastfed, even when the assessment is made in children less than 4 months of age (WHO, 2003). Survey data from 43 countries indicate a significant increase in exclusive breastfeeding, from 39% to 46% between 1989 and 1999, with wide variations within and between geographic regions. Exclusive breastfeeding rates for infants 0–3 months of age range from 25% (Dominican Republic, 1996) to 78% (Peru, 2000) in Latin America and from 4% (Côte d-Ivoire, 1998/99) to 63% (Malawi, 2000) in Africa. Nevertheless, in many developing countries certain cultural beliefs continue to interfere with optimal breastfeeding, especially feeding colostrums and breastfeeding exclusively (WHO, 2003)

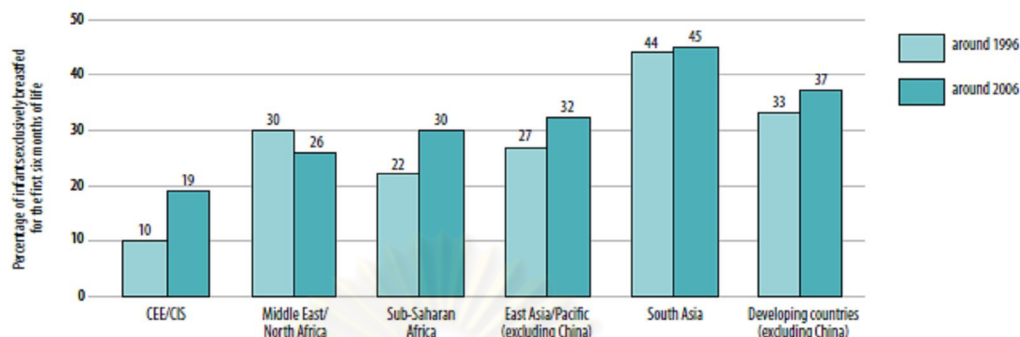


Figure 5: Trends in exclusive breastfeeding rates (1996-2006)

Source: WHO, 2009

Exclusive breastfeeding for the first six months of life confers important benefits on the infant and the mother (WHO, 2003). For the mother, breastfeeding also has both short- and long-term benefits as the risk of postpartum haemorrhage may be reduced by breastfeeding immediately after delivery, and there is increasing evidence that the risk of breast and ovarian cancer is less among women who breastfed (WHO, 2009). Furthermore, exclusive breastfeeding can delay the return of fertility, and accelerate recovery of pre-pregnancy weight. Mothers who breastfeed exclusively and frequently have less than a 2% risk of becoming pregnant in the first 6 months postpartum, provided that they still have amenorrhea (WHO, 2009).

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2.3 Maternal Health Care in Myanmar

Myanmar has decided to prioritize achievement of the MDGs in the area of maternal, newborn and child health. Therefore a ‘‘Five-year Strategic Plan for Reproductive Health ‘‘ was initiated (2004-2008) (WHO, 2005) aiming at reducing the maternal, newborn, infant and children morbidity and mortality (Ministry of Health Myanmar, 2009).

According to the ‘‘Nationwide Cause-specific Maternal Mortality Survey’’, carried out by Department of Health in 2004-2005, maternal mortality ratio was estimated at 316 per 100,000 live births at the national level and 89% of all maternal deaths were reported from the rural areas and it is 2.5 times higher than that in urban areas. The findings showed that the complications during antenatal and delivery periods were the main causes of maternal mortality and morbidity and 80% of maternal deaths were mostly at home. The majority of this mortality is found to be preventable (Ministry of Health and Ministry of Social Welfare, Relief and Resettlement, 2008).

Table 2.1: The main causes of maternal deaths in Myanmar

No	Cause of death	Percent
1	Post-partum haemorrhage (PPH)	30.98
2	Eclampsia	11.27
3	Abortion related complications	9.86
4	Puerperal Sepsis	7.04
5	Hypertensive disorders	5.63
6	Prolonged/Obstructed labour	8.46
7	Ante partum haemorrhage (APH)	4.23
8	Ruptured uterus	4.23
9	Embolism	1.41
10	Indirect causes	16.90

Source: Ministry of Health and Ministry of Social Welfare, Relief and Resettlement, 2008

Maternal and child health care services are provided both in urban and rural settings and it is also a crucial component of National Health Plan. The maternal and child health care, consisting of antenatal care, aseptic and safe delivery, postnatal care, newborn care, under-one infant care, immunization, growth monitoring of under-three children, nutritional education, control of diarrhea diseases and

management of acute respiratory infection, has been provided by basic health workers with the assistance of voluntary health workers and the community all over the country (Ministry of Health Myanmar, 2009).

The Fertility and Reproductive Health Survey 2001 found that the majority of women (73 per cent) received one time antenatal care (ANC) from a trained provider, most commonly from a nurse or midwife. The average number of ANC visits during pregnancy was five, with 40 per cent of women making three to five ANC visits; however, only 22% of women received 4 or more antenatal visits (UNICEF, 2008). ANC services are provided free of charge and advice is given on breastfeeding, nutrition and immunization (Country Profile Myanmar, 2000). The number facilities with functioning basic essential obstetric care is 8/500,000 population and that of comprehensive essential obstetric care is 4/500,000 population (Ministry of Health and Ministry of Social Welfare, Relief and Resettlement, 2008).

Among basic workers, lady health visitors and midwives are backbones in provision of maternal health care with the assistance of auxiliary midwives (AMWs) (WHO, 2009). The proportion of births attended by skilled health personnel was increasing in trend from 50.8% in 1990 to 67.5% in 2003 (WHO, 2009). However, home delivery by skilled attendant was 60% in 2004 (WHO, 2009). Type of the assistance during delivery was shown in figure 6. During delivery, women were assisted by a nurse/midwife (44 per cent); by a traditional birth attendant (39 per cent); by a doctor (13 per cent); or by relatives (2.9 per cent) (Country Profile Myanmar, 2000).

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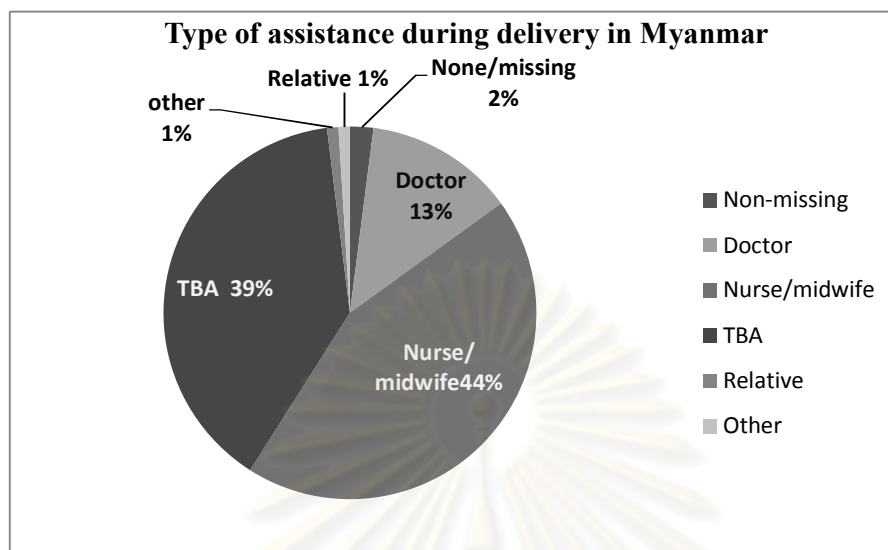


Figure 6: Type of assistance during delivery in Myanmar

Source: Country profile Myanmar, 2000

The percentage of postnatal women receiving 6 or more contacts for postnatal care is 56.4%, in 2005, up from 51.4% in the base year 2002. There is an urban-rural difference in favor of rural women under 6 postnatal contacts. Since the target postnatal care is 65%, 8.6% of postnatal women especially in rural areas have to be contacted more for PN care to achieve the desired target (UNICEF Myanmar, 2005).

Table 2.2 shows the coverage of antenatal care, home delivery by skilled attendants and postnatal care from 1999 until 2004.

Table 2.2: Performance coverage of antenatal, skilled attendants and postnatal care from 1999 to 2004

	1999	2000	2001	2002	2003	2004
Antenatal Care	59.3	60.1	62.4	55.7	61.7	70.0
Home Delivery by Skilled Attendants	39.4	40.1	37.2	37.4	40.7	60.0
Postnatal Care	3.2	3.5	4.1	5.2	5.3	6.0

Source - WHO, 2009

Focused training on safe motherhood was given to all midwifery-trained health staff, and they were equipped with midwifery kits. Establishment of labour rooms attached to the rural health centers was taken place to ensure all deliveries attended by skilled birth attendants. Birth plan including community support for transportation in obstetric emergency was arranged to be practiced. Community advocacies were carried out to promote the awareness of pregnant mothers on their own reproductive rights (UN, 2009).

2.3.1 Breastfeeding in Myanmar

Breastfeeding is quite common in Myanmar. It has been the traditional infant feeding practice in both rural and urban communities where prevalence is more than 90%. Multiple Indicators Cluster Survey in 2003 indicated that the breastfeeding rate was 82.9% at 12-15 months and 58.8% at 20-23 months. But proportion of exclusive breastfed infants under six months of age was as low as 16% (UN, 2009). Figure 7 shows the exclusive breastfeeding rate in 2003.

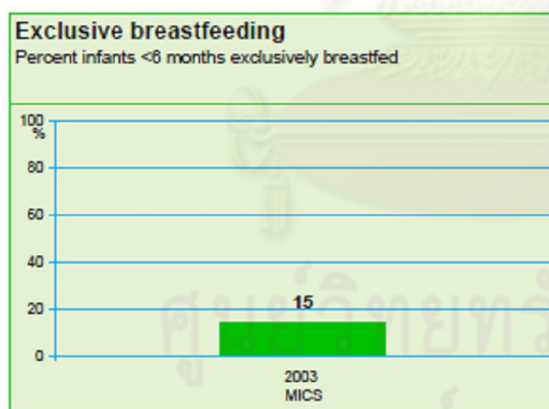


Figure 7: Prevalence of exclusive breastfeeding in Myanmar in 2003

Source: UNICEF, 2008

2.3.2 Contraceptive used in Myanmar

Birth spacing methods have been available in the public sector in Myanmar since 1991. Before the introduction of any public sector birth spacing service, the contraceptive prevalence rate is as low as 16.8 per cent of all married couples. By

1995, the government's birth spacing project covered 33 townships of the Myanmar's 320 townships. By 2001, the use of contraceptive methods had increased to 117 townships of the Myanmar's 320 townships (WHO, 2007). In 2001, the contraceptive prevalence rate for any method including traditional methods is 37 per cent (UN, 2005). Table 3 shows the contraceptive method used by married women in 2001.

Table 2.3: Contraceptive Method Used by Married Women in Myanmar, 2001

Not using any method	63.0%
Pill	8.6%
Injectables	14.9%
IUD	1.8%
Female sterilization	4.7%
Other modern methods	1.2%
Male sterilization	1.3%
Any traditional or natural method	4.2%
Condom	0.3%

Source – World Health Organization, 2007

Despite of increasing use of contraception, the unmet need for birth spacing remains significant with the total 20% of married women wants to use contraception for either to limit their births or to delay their next pregnancy (WHO, 2007). This suggests at the lack of acceptable long-term methods of contraception. The main constraints are lack of information about reproductive health, limited resources and social and cultural barriers (Country Profile Myanmar, 2000).

According to the Fertility and Reproductive Health Survey (FRHS) conducted by the Department of Population and the United Nations Population Fund in 2001, knowledge of at least one modern method of contraception among currently married women has increased from 92.4 per cent in 1997 to 96.1 percent in 2001. During the same period the knowledge of sources of modern contraceptive methods has increased from 87.8 per cent in 1997 to 94.3 percent in 2001. Among the currently married women surveyed, the mean number of contraceptive methods known was 5.2. Adolescent women (15-19 years) and older women (45-49 years) were found to know fewer methods of contraception (4.7 and 4.9 respectively) than women in other age groups, and a higher proportion of them had no knowledge of contraception (5 percent

and 6.7 per cent respectively versus 3.5 per cent in the overall sample) (Country Profile Myanmar, 2000).

Acceptable, affordable and accessible family planning information, education and communication and education for prenatal care, safe delivery, postpartum care, the promotion of breastfeeding are the constituents of basic package of reproductive health services (Francisco A, et al, 2007). Additionally, promoting community awareness and community involvement is one of the recommended activities to be strengthened safe motherhood in Myanmar (Ministry of Health and Ministry of Social Welfare, Relief and Resettlement, 2008).

2.4 Health Education

Health education is indispensable in achieving individual and community health (Park K, 2005). Health education is defined in 1976 by Simonds as aimed at bringing about behavioral changes in individuals, groups, and larger populations from behaviors that are presumed to be detrimental to health, to behaviors that are conducive to recent and future health (Glanz K, 1997).

In 1980, Green defined health education as any combination of learning experiences designed to facilitate voluntary adaptations of behavior conducive to health (Glanz K, 1997). Health education is any planned activity designed to produce health-related or illness-related learning aiming the occurrence of a relatively permanent change in capability or disposition- that is, the change produced is not transitory and, after the health educational intervention, people are capable of achieving what they were not capable of achieving before the intervention and/or feel differently about ideas, people or events (Tones K and Green J, 2004).

Health education is concerned not only with individuals and their families, but also with the institutions and social conditions that impede or facilitate individuals toward achieving optimum health (Glanz K, 1997).

From Declaration of Alma-Ata by emphasizing the need for individual and community participation, health education is defined as the process aimed at encouraging people to want to be healthy, to know how to stay healthy, to do what they can individually and collectively to maintain health, and to seek help when needed (Park K, 2005).

Health education does not replace other health services, but it is needed to promote the proper use of these services. Health education is that part of health care that is concerned with promoting healthy behavior. A person's behavior is not only the main cause of a health problem, but can also be the main solution. Health education encourages behavior that promotes health, prevents illness, cures disease and facilitates rehabilitation. The needs and interests of individuals, families, groups, organizations and communities are at the heart of health education programs. (WHO, 1978)

Health education is not the same thing as health information. Health education uses therefore variety of methods to help people to understand their own situations and choose actions that will improve their health (WHO, 1978). The most common channel of communication for health education is the interpersonal or face-to-face communication. Being personal and direct, it is more persuasive and effective than any other form of communication and it is particularly important in influencing the decisions of undecided persons (Park K, 2005).

Effective health education may result in the development of cognitive capabilities such as the acquisition of factual information, understanding and insights. It may also result in clarification of existing values and the creation of new values – and quite frequently, in attitude change (Tones K and Green J, 2004). It also helps increasing knowledge and to reinforce desired behavior patterns which in turns bring about changes in lifestyles. Health education also aims to foster the acquisition of health-related psycho-motor or social interaction skills. It may even bring about changes in behavior or lifestyle or create the conditions for adoption of healthy public policy (Tones K and Green J, 2004).

Numerous health education interventions had been carried out for preventing major prenatal, obstetric and postpartum complications which in turns enhancing maternal health. The integrative prenatal care model which included education, group discussions and skills building to pregnant women was used in the multisite randomized controlled trial conducted in US to determine whether group prenatal care leads to better reproductive health outcomes and improve psychosocial outcomes. From this study, it was revealed that the women in the group care had more psychosocial advantages such as pregnancy knowledge in terms of prenatal care

knowledge and infant care knowledge were significantly better in the women in group care; breast feeding initiation was higher and these women felt more prepared for labor and delivery (Ickovics JR, et al. 2007).

A community based antenatal education program was done among the first-time expectant mothers in Istanbul, Turkey which may increase the chance that women will adopt behaviors related to infant health (breastfeeding and infant check-up) and contraception in the period following a birth. This study revealed the significant difference in the areas of breastfeeding behavior of first breastfeeding within 2 hours after birth and protection from unwanted pregnancy by increasing contraceptive method with male participating; but not in postpartum check-ups for the mother. (Turan JM and Say L, 2003)

Awareness of the danger signs of obstetric complications is the essential first step in accepting appropriate and timely referral to obstetric. The likelihood of awareness of obstetric danger signs increased with women informed of having a risk or complication during antenatal care visits (Pembe A B, et al, 2009).

The household interviews and health facilities survey was carried out in Kenya of special interest of assessing of the effect of health promotion, whether the respondent was advised during antenatal care to deliver at a health facility. It was found that respondents who were advised during antenatal care to deliver at a health facility were 47% more likely to use health facilities in general and the well-equipped ones in particular, compared with those who were not advised ($P < 0.01$) (Fosto J C, et al, 2008).

A health and nutrition education intervention was conducted in Hubei, China among pregnant women with the aim of providing the information on contemporary post partum practices and to overcome the traditional unhealthy postpartum practices. Women in the intervention groups exhibited significantly greater improvement in overall nutrition and health knowledge after the education session; and significantly more women in intervention groups gave up the traditional behavior taboos. The study showed that health and nutrition education intervention enable the women take away some of the unhealthy traditional postpartum practices and decrease the prevalence of postpartum health problems. A nutrition and health education contact

can have effect on postpartum practices even among lower educated, rural women (Liu N, et al, 2009).

Attendance at nutrition and health care education courses resulted in an increased consumption of fruit and a decreased tendency of complying with behavior taboos. Health education influences one's nutrition and health care knowledge, behavior and attitude toward postpartum practices. Thus, when promoting contemporary postpartum practices, health education courses should be encouraged. Attending postpartum health care education courses could decrease the risk of complying with traditional behavior taboos (Liu N, et al, 2006).

The LINKAGES' project aiming to demonstrate that breastfeeding practices, crucial to infant health, can be improved at scale in developing countries was conducted in Bolivia and Madagascar. LINKAGES implemented the community based model of behavior change to induce rapid change in individual behavior and community norms relating early and exclusive breastfeeding over wider geographic area, more quickly, and more equitably. The messages were transmitted through behavior change booklets and health cards developed specially for mothers and families and multiple behavior change channels were used. In Bolivia, timely initiation of breastfeeding went from 34% at baseline in 2000 to 69% in 2001, 76% in 2002, and rose to 78% in 2004; and exclusive breastfeeding for the first month of life was 81% in 2000, decreased slightly in 2001 and then increased to 88% in 2003. In Madagascar, the initiation rate went from 34% at baseline in 2000 to 69% in 2001, 76% in 2002, and rose to 78% in 2004. At the same time, exclusive breastfeeding rate was also increased to 91% at the end of program (Baker AJ, et al, 2006).

Even though the health education by health workers is still seen as an important part of primary health care, training of health workers to convey messages, and the development of health education materials consumes a substantial proportion of health budgets and may be ineffective. In Nepal, post natal health education sessions were given on two occasions such as immediately after delivery and 3 months later and the mothers were given health education about exclusive breast feeding and family planning including infant feeding, the importance of immunization and the importance of contraception after puerperium. It was revealed that there was no significant impact on the mother's knowledge and practices of child care; however

there was a slight improvement in uptake of family planning at 6 months after birth (Bolan A, et al. 1998).

Health education include not only instructional activities and other strategies to change individual health behavior but also organizational efforts, policy directives, economic supports, environmental activities and community level programs (Glanz K, 1997). Without participation there is no health education (WHO, 1978). Participation is the key word in health education for encouraging people to work actively with health workers and others in identifying their own health problems and also in developing solutions and plans to work out them. A high degree of participation tends to create a sense of involvement, personal acceptance, decision-making and maximum feedback (Park K, 2005).

2.5 Pictorial Health Education

The effectiveness of health communications can be significantly increased by including pictures in the design of new health education materials. Pictures closely linked to written or spoken text can, when compared to text alone, markedly increase attention to and recall of health education information. Pictures can also improve comprehension when they show relationships among ideas or when they show spatial relationships. Pictures can change adherence to health instructions, but emotional response to pictures affects whether they increase or decrease target behaviors. All people can benefit, but people with low literacy skills are especially likely to benefit. Spoken information can, with the help of pictures, be recalled to a high degree by people with low literacy skill. People with very low literacy skills can be helped by spoken directions plus pictures to take home as reminders or by pictures plus very simply worded captions (Houts P S, et al, 2006).

Too much information, long words used in complex sentences and technical language are confusing. It is important that materials distributed with lower reading levels have a clear core message delivered with simple language.

Pictorial health messages have benefits such as

- Noticed, have constant impact and communicate health messages effectively.
- Break illiteracy barrier.

The study was done in India to determine the opinion of general public towards implementation of pictorial warnings on cigarette packs and it revealed that more than 90% were aware the health messages and there was a positive response for implementation of pictorial warnings on cigarette packs (HRIDAY AND AFTC, 2010)

In Jamaica, mother-held pictorial card was developed aiming to raise awareness and appropriate health seeking behavior in response to prodromal symptoms of imminent eclampsia. The efficacy and acceptability of a patient-held pictorial card was assessed by conducting survey before and 6 months after the cards were introduced. It revealed that mothers' awareness and response to symptoms improved significantly and there was a marked drop in eclampsia incidence. Moreover, interviewed with 18 health care professionals at primary and secondary levels to assess their reaction to this tool and they mentioned that the card was seen as widely acceptable and increased their own awareness of the prodromal symptoms of eclampsia and their discussion of these symptoms with antenatal mothers (MacGillivray I, et al, 2004).



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2.6 Community Participation

Community is a group of people living in the same defined area sharing the same basic values and organization and same basic interests. Participation implies the right and responsibility of people to make choices and therefore, explicitly or implicitly, to have power over decisions which affect their lives (Rifkin SB, et al, 1988).

Rifkin and colleagues defined community participation as: ‘a social process whereby specific groups with shared needs living in a defined geographic area actively pursue identification of their needs, take decisions and establish mechanisms to meet these needs (Eyre R and Gauld R, 2003).

The rationale for pursuing community participation includes promoting positive health behavioral change; improving service delivery; mobilizing human, financial and other material (including in-kind) resources for health services; and as a means of empowering the community. Community participation initiated by outside actors is only likely to be effective and lasting if the local community achieves a sense of ownership (Jacobs B and Price N, 2003).

The Alma-Ata declaration states “The people have a right and duty to participate individually and collectively in the planning and implementation of their health”. If community participation is not an integral part, health programs are unlikely to succeed (Park K, 2005). Primary health care is based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self reliance and self-determination (USSR, 1978).

Community participation is measured by using framework and Rifkin identified five factors which influence the community participation. These factors are (1) needs assessment, (2) leadership, (3) organization, (3) resource mobilization and (5) management. Community participation is measured to examine process rather than impact of community participation in health programs. For each factor, a continuum is developed with wide participation at one end and narrow participation at the other. Then the continuum is divided into a series of points and a mark is placed at the point

which most closely describes participation in the health program. These indicators do not value wider community participation as good or bad nor do they correlate with improved health status. They are intended to show describe the changes and show the processes of participation in specific health programs. The broad participation builds on a wide range of activities and involvement of many different community groups (Rifkin SB, et al, 1988).

Needs assessment is the process in which researcher and community members who plan the program can determine what problem might exist in a group of reproductive age women. Professional assessment alone places the indicator at the narrow end of the spectrum. It moves towards broader participation with actions that involve community members in research and analysis of needs.

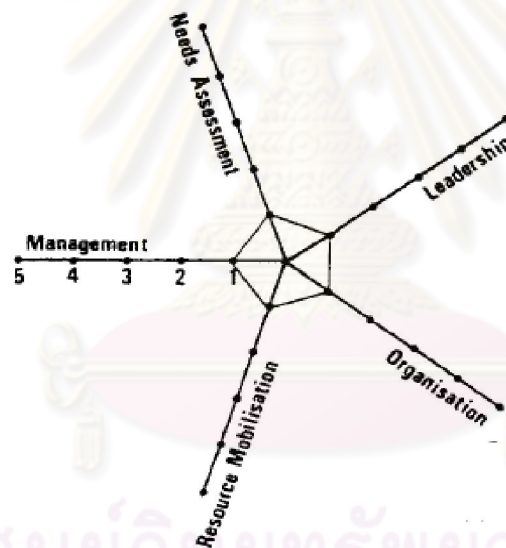


Figure 8: Participation viewed as a Spider-gram

Source: Rifkin SB, et al, 1988

Leadership refers to whom the existing leadership represents and how does the leadership act on the interest of various community groups, especially the poor and how responsive are the leaders to change. Narrow participation is present if the leadership represents only the small and wealthy minority and continues to act in their interest. The indicators moves toward the wider end if the leader ship represents the variety of interests present in its constituencies.

Organization: The program with community organization created by planners will see the indicator at narrow end of the continuum. Where community organization such as village health committee and village leadership team incorporate or create its own mechanism for introducing health program, the mark will fall near the board end.

Resource mobilization is a symbol of commitment to a program. Participatory maternal health education program committee has role to decide on allocations according to the existing resources. A point at the narrow end of the spectrum would be one which showed a program with a small commitment of indigenous resources (money, manpower, materials) and/or limited decisions about how local resources are allocated. Flexibility should be exercised in deciding how these resources can be used.

Management refers to not only the management of the organization responsible for the program but also the management of the program itself. Decision and management structures favored by participatory maternal health education program committee indicate wide range of participation.

2.7 Participatory Action Research

Participatory action research was originally developed in Latin America. The common ground for development of PAR was concern about marked inequalities in the distribution of resources and power between those who are privileged and dominant, and those who are marginalized and oppressed (Liamputtong P and Ezzy D, 2005).

Participatory action research is defined as 'systematic inquiry, with the collaboration of those affected by the issue, for the purpose of education or effecting social change'. The participatory action research approach is characterized by six major criteria: (1) it is participatory; (2) it is cooperative; (3) it is a co-learning process; (4) it involves systems development and local capacity building; (5) it is an empowering process for participants; and (6) it achieves a balance between research and action. One of the main characteristics of PAR is that it eliminates the traditional distinction between the researchers and the researched (Morisky D, et al, 2004).

Participatory research is a process through which members of an oppressed group or community identify a problem, collect and analyze information, and act upon

the problem in order to find solutions to promote social and political transformation (Selener D, 1998).

Participatory research combines three principal activities: research, education and action. It is a research method in which people are actively involved in conducting a systematic assessment of a social phenomenon by identifying a specific problem for the purpose of solving it. It is an educational process because researcher and participants together analyze and learn about the causes of and possible solutions to the problem addressed. It is an action oriented activity since findings are implemented in the form of practical solutions. All three processes are conducted in a participatory way between outside researcher and participants (Selener D, 1998).

The Chinese proverb, “If I hear, I forget; if I see, I remember; if I do, I know” illustrates the importance of learning by doing (Park K, 2005). Action research is “learning by doing”: learning is an action-process; not a “memorizing” one in the narrow sense - a group of people identify a problem, do something to resolve it, see how successful their efforts were, and if not satisfied, try again (Brein RO, 1998).

A simple model of the cyclical nature of the typical action research process has four steps: plan, act, observe, and reflect. (Figure 9)



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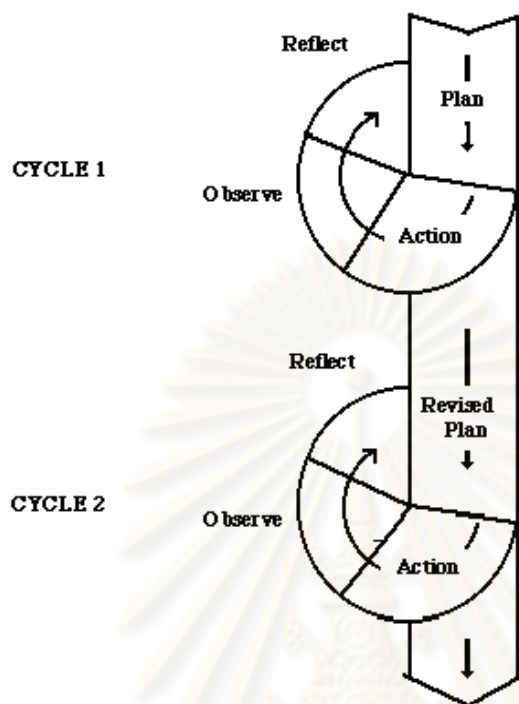


Figure 9: Simple Action Research Model

Source: Brein RO, 1998

Planning in PAR is constructive and arises during discussions among the participants. Action happens when the plan is put into place and the hoped for improvement to the social situation occurs. This action will be deliberate and strategic. Observation in PAR is the 'research' portion of PAR' where the changes as outlined in the plan are observed for its effects and the context of the situation. Reflection in PAR is that moment where the research participants examine and construct, then evaluate and reconstruct their concerns (Seymour-Rolls K and Hughes I, 2000).

In participatory action research, the community groups are seen as active subjects of the research as opposed to passive subjects having research done on them. They take an active role from the beginning of the project and, through this active participation, they gain new knowledge and skills and hence increased self-

confidence; and it is believed to empower the local community and assist them to change their lived situation (Liamputtong P and Ezzy D, 2005).

PAR is used in community development because of the following reasons.

1. It assists those who are marginalized and deprived to gain self-confidence and pride in being able to provide a useful contribution to community life.
2. It allows respect and empathy in professional groups for the insights and knowledge people have and the problems they face.
3. It helps to avoid mistakes and to develop programs that take into account the specific situation and conditions which will influence the outcome of programs. (Liamputtong P and Ezzy D, 2005)

Moreover, the PAR process is increasingly viewed as a means of overcoming persistent barriers to rural development. Such barriers include:

- (a) Difficulty in identifying projects that is directly responsive to people's need.
- (b) Delays and failures in project implementation, often due to lack of involvement of rural families and communities in project planning and organization.
- (c) Weak linkage among projects and among essential component of projects.
- (d) Limited support by external agencies to realistic initiatives taken by villagers.

PAR has promise for overcoming these barriers by engaging a wide variety of groups and individuals in program planning, organization and implementation (Jongpiputvanich S, et al, 1991).

Participatory action research was successfully employed with migrant children and youth along the borders of China, Myanmar and Thailand by the Save the Children (UK) aiming emphasized listening to the perspectives of children and youth and exploring with them their concerns, needs and opportunities for change. Children and youth were empowered to define their own problems and appropriate interventions which consisted of strengthening social structures, awareness raising, capacity building, life skills development and outreach services were initiated (DFID and SC, 2001).

2.8 Precede-Proceed Planning Model

PRECEDE-PROCEED model is based upon the principle of participation which assumes that success in achieving behavior change in any population is enhanced when individuals in the target population have the opportunity to assist in the prioritization of problems and in developing and implementing the solutions (Windsor R, et al, 2004).

PRECEDE-PROCEED model was developed by Green, Kreuter and associates (US Department of Health and Human Services, 2005) and the framework originated in the 1970s. Firstly, the model was based on the premise that just as medical diagnosis precedes a treatment plan. In 1991, proceed was added to framework, in recognition of the emergence of and need for health promotion interventions that go beyond traditional educational approaches to changing unhealthy behaviors. Precede-Proceed is not considered a behavior theory per se, it is a conceptual framework for practice, or planning model (Glanz K, et al, 1997).

This framework provides a comprehensive guide to planning and implementing health promotion activities in nine phases; the first five involve diagnosis or needs assessment and the last four involve implementation and evaluation (Valente TW, 2002). The first five steps are diagnostic, addressing both educational and environmental issues. These includes: (1) social assessment, (2) epidemiological assessment, (3) behavioral and environmental assessment, and (5) administrative and policy assessment. The last four steps comprise implementation and evaluation which are (6) implementation, (7) process evaluation, (8) impact evaluation, and (9) outcome evaluation. (US Department of Health and Human Services, National Institutes of Health, 2005)

The starting point of the model is an assessment of the quality of life and any social problems experienced by the population. It then identifies any specific health problems that contribute to quality of life and establishes which of these should be prioritized. These are then analyzed to establish both environmental and behavioral risk factors. Further analysis identifies the plethora of factors that influence health behavior grouping as predisposing, reinforcing and enabling factors (Tones K and Green J, 2004). The last four steps comprise program implementation and evaluation which are process evaluation, impact evaluation and outcome evaluation. Process

evaluation gauges the extent to which a program is being carried out according to plan. Impact evaluation looks at changes in predisposing, enabling and reinforcing factors that influence the likelihood that behavioral and environmental change will occur. Outcome evaluation looks whether the intervention has affected health and quality-of-life indicators (US Department of health and human services, National Institutes of Health, 2005).



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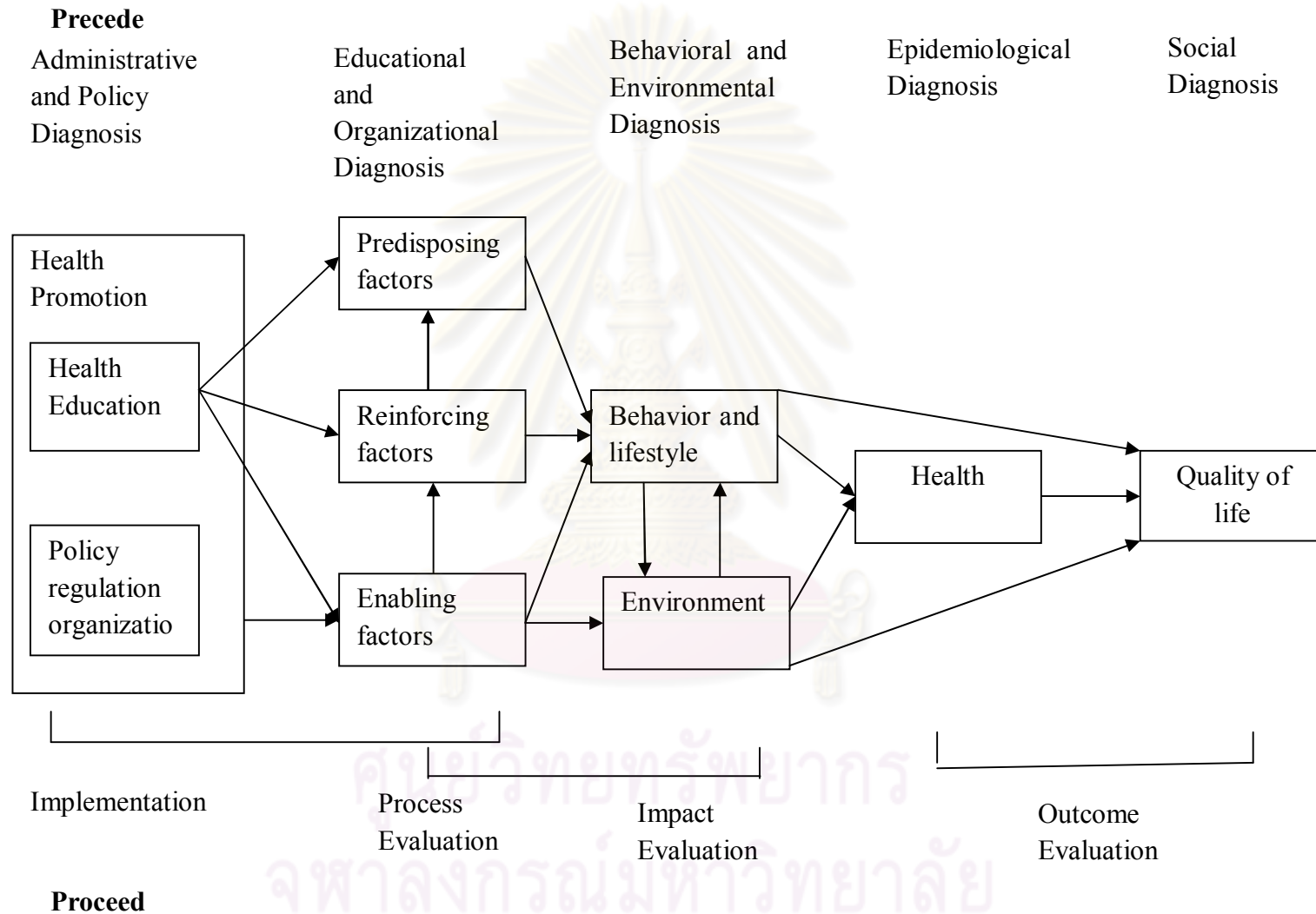


Figure 10: Precede-Proceed model

Source: Green and Kreuter, 1991 (From Glanz K, et al, 1997)

The strength of the Precede-proceed model is the attention given to identifying the multiple factors that affect the health status as a basis for focusing in the subset of the factors that need to be addressed by the proposed intervention (Tones K and Green J, 2004).

Using the Precede-Proceed model, the various individual and environmental factors influencing practice of maternal health in antenatal, delivery and postnatal period including breastfeeding and family planning practice are analyzed in terms of predisposing, reinforcing and enabling factors.

Predisposing factors are the antecedents that provide the rationale or motivational for a behavior including individual's knowledge, attitude, beliefs, personal preferences, existing skills, and self-efficacy beliefs. In this study, "*Predisposing factors*" refer to the factors leading to motivation to practice including the women's knowledge and attitudes toward maternal health during antenatal, delivery and postnatal period including breastfeeding and contraception and socioeconomic characteristics such as age, education, occupation, total family income, number of pregnancy, and number of living child.

"Knowledge" is defined as acquiring basic understanding of facts and information and also to generalize, integrate and apply this information with a view to solve the day to day problems in the life situation (Kumari KS. 1994).

"Attitude" represents beliefs which have an emotional component and psychological basis. It represents the ability to be receptive to new ideas or different ways of thinking about a situation. Strong feelings of concern for nutrition and health status and the motivation for active participation in education program denote a favorable attitude (Kumari KS. 1994). Attitude has been defined as a relatively enduring organization of beliefs around an object, subject or concept which predispose one to respond in some preferential manner. An attitude includes three components:

- (a) A cognitive or knowledge element
- (b) An affective or feeling element, and
- (c) A tendency to take an action (Merriam-Webster)

The utilization of antenatal care and postnatal care were more likely influenced by women's knowledge about danger signs during pregnancy, delivery and postnatal

period. The pregnant women who had good knowledge on antenatal care had the lowest percentage of inadequate ANC utilization compared to those with poor knowledge was found out from the study done among pregnant women at health centers in Indonesia (Erlindawati, et al, 2008).

Among rural-to-urban migrant women in China, the women who have attended 5 times or more antenatal care had a statistically significant higher knowledge score than those who had less antenatal visits (Zhao Q, 2009). From the survey done in Indonesia, the woman with low knowledge about problems during delivery tended to use traditional health providers for their delivery when compared to woman with high knowledge of danger signs (Sugiarto T, 2007).

A hospital-based cross sectional study to determine the factors related to regular utilization of antenatal care (ANC) among postpartum mothers in Indonesia showed that high knowledge mothers knew the benefit of ANC for their health and their babies' health. Mothers of low level of knowledge on ANC were 3.53 times more likely to have irregular ANC visit than the high level group. Postpartum mothers with negative attitude towards ANC were 5.69 times more likely to attend irregular ANC visit than positive attitude group (Effendi R, et al, 2008).

The main reason for the non-use of postnatal health services is the lack of awareness or not perceiving a need for it (Anchrya LB and Clealand J, 2000). The study done among Palestinian women revealed that the utilization of postnatal care was much lower in women with negative attitude and low utilization of post natal care has been related to women's lack of knowledge about its importance and their lack of perceived need (Dhaher E, 2008).

In Uganda, the mothers' awareness of postnatal services significantly ($p < 0.001$) influenced the utilization of postnatal services as most of the mothers (70%) were knowledgeable about postnatal services and among them, quite a large proportion (82%) utilized the services (Annet N, 2004).

Even though the knowledge is not the only one factor which impact behavior, Qian and Yue state that one of the main factors shaping behavior is knowledge. Behavior is the human action or reactions for adapting to and changing the environment. Knowledge is the summarization of fruit and experiences by the human

activities of understanding and practicing, and includes intelligence (Qian W and Chen Y, 2002).

In **socioeconomic factors**, maternal education act as a stand-in variable for a number of background variables representing a woman's higher socio-economic status, thus enabling her to seek proper medical care whenever she finds it necessary. Literacy of women showed a significant association with respect to utilization of antenatal care services as women with primary education was more likely to have inadequate antenatal utilization (Erlindawati, et al, 2008) (Effendi R, et al, 2008). The first antenatal check up in the first trimester was very low among illiterate mothers and mothers with secondary and higher education were more likely to obtain institutional or skilled attendance delivery and postnatal check up (Yuesdian PP, 2009).

Similarly, it was observed that as education of women increases so did the likelihood of having postnatal health care (Dhakal S, et al, 2007) (Annet N, 2004). However, the study done among Palestinian women showed that education level of women was not significantly associated with receiving postnatal care (Dhaher E, et al, 2008) and similar was found among women in Saudi Arabia (El-Gilany A and Hammad S, 2008). Furthermore, woman's education was not significantly associated with early initiation of breastfeeding (Turan JM and Say L, 2003).

Notwithstanding maternal age is important predictor for enhancing utilization of maternal health care (Yuesdian PP, 2008), it is also not a significant predictor for utilization of antenatal care services (Erlindawati, et al, 2008), also not with obtaining postnatal care (El-Gilany A and Hammad S, 2008) (Dhaher E, et al, 2008) (Annet N, 2004), and not significantly associated with early initiation of breastfeeding (Turan JM and Say L, 2003).

It is anticipated that income has a positive impact on the utilization of maternal health care as higher family income of pregnant women had the lowest percentage of inadequate utilization of ANC services (Erlindawati, et al, 2008) and mothers with low family income were more likely to have irregular ANC visit (Effendi R, et al, 2008). Conversely, among women in Saudi Arabia, utilization of postnatal care was not significantly associated whether the family income was satisfactory or not (El-Gilany A and Hammad S, 2008).

Since, occupation of mother is considered to be one of the factors which influence uptake of maternal health care, housewives were 7.25 times (95% CI = 2.94–18.18) more likely to have had postnatal care than women who reported farming as their main occupation (Dhakal S, et al, 2007). Nevertheless, maternal work was not significantly associated with receiving postnatal care whether the woman was housewife or work outside (El-Gilany A and Hammad S, 2008).

Parity of women and number of children alive are the important predictors of maternal health care utilization. Even though women with three or more children were less likely to have had postnatal care in Nepal (OR = 0.16; 95% CI = 0.04–0.51) than a woman with one or two children (Dhakal S, et al, 2007), larger family size and number of living children was not significantly predictor for postnatal care uptake (El-Gilany A and Hammad S, 2008) (Dhaher E, et al, 2008) (Annet N, 2004). Having had more pregnancies was associated with a lower chance of postnatal care utilization ($p = 0.001$) (Dhakal S, et al, 2007). In contrast Parity such as primigravida and multigravida were not significantly related among women in Saudi Arabia (El-Gilany A and Hammad S, 2008) and also among women in Indonesia (Effendi R, et al, 2008).

Enabling factors are the antecedents that enable motivation to be realized; they can affect behavior directly or indirectly through an environmental factor including the new skills, programs, services, and resources necessary for behavioral and environmental outcomes (Glanz K, et al, 1997). In this study, “*Enabling factors*” refer to the availability and accessibility to maternal health education service such as women’s group health education, and health education pamphlets and handbooks.

Media is a medium through which a woman could obtain knowledge/ awareness/ information and exposure to at least one of the media was sufficient. The study done in India showed that empowerment factors such as education and exposure to mass media show positive relationship towards maternal care utilization. Prenatal care utilization is also very high among media exposed mothers, that is, 61.1 percent among media exposed mothers to 31.2 percent among non-media exposed mothers (Yesudian P P, 2009).

The community based home visiting program was conducted using parenting curriculum and encouraging contraceptive use among African American adolescent

mothers. Adolescent mother's parenting attitudes and beliefs were significantly improved but the program was effective neither in reducing the odds of repeat pregnancy nor improving use of hormonal contraception (Barnet B, et al, 2007).

A prenatal and infancy home visitation program on the maternal life course of women was conducted among urban black women and nurse visited women had fewer subsequent pregnancies, fewer closely spaced subsequent pregnancies and longer intervals between the birth of first and second child were found out 3 years after the program ended (Kitzman HR, et al, 2000).

Understanding of the importance of postnatal care is vital to improved uptake of postnatal care. The uptake of postnatal care might be associated with health education and counseling received during antenatal visits and the delivery. Women's empowerment factors such as education, exposure to mass media and household autonomy play a major role in the utilization of maternal health care (Dhakal S, et al, 2007).

Reinforcing factors are those elements that appear subsequent to the behavior and that provide continuing reward or incentive for the behavior to become persistent such as social support, peer influence, significant others, and vicarious reinforcement. In this study, "*Reinforcing factors*" refer to the community's support and village health volunteers' supports which come from participation of village leader, village health committee, auxiliary midwives and training of village health volunteers.

Community participation is the key to the success of virtually every community-based development project. In 1980, Thailand government decided to decentralize primary health care system based on the village depot approach and introduced a program in which training selected community members as village health volunteers (VHVs), village health communicators (VHCs) as well as traditional birth attendants (TBAs) in addition to government health and family planning services. A community participation in family planning study was carried out to determine the community participation and it was revealed that knowledge about the family planning program was increased and services were greatly accessed as benefits of community participation. Moreover, participation of community was valued as an important strategy for helping to manage and implement family planning service. Life has changed lot and the erosion of traditional behavior pattern was happened.

Community participation was visible and increasing in the family planning activities even that have no overt and immediate economic benefits. This study recommended that to be more cost-effective, the programs should be integrated more thoroughly with high degree of community participation (Yoddumnern-Attig B, et al, 1993).



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CHAPTER III

METHODOLOGY

3.1 Site of the study

This study was taken place in Shan State which is located in the east central part of Myanmar. There are 11 townships, 1626 village groups and 15513 villages in Shan State.

This study was carried out in Tee Lone, Lone Chin, and Lone War (Kyout Ngat) villages which are located in Taunggyi Township, Shan State. The total population in these 3 villages is estimated about 1100 and reproductive age women comprises of 30%.

3.2 Target Population

The target population was Pa-O women who were within reproductive age between 15 to 49 years.

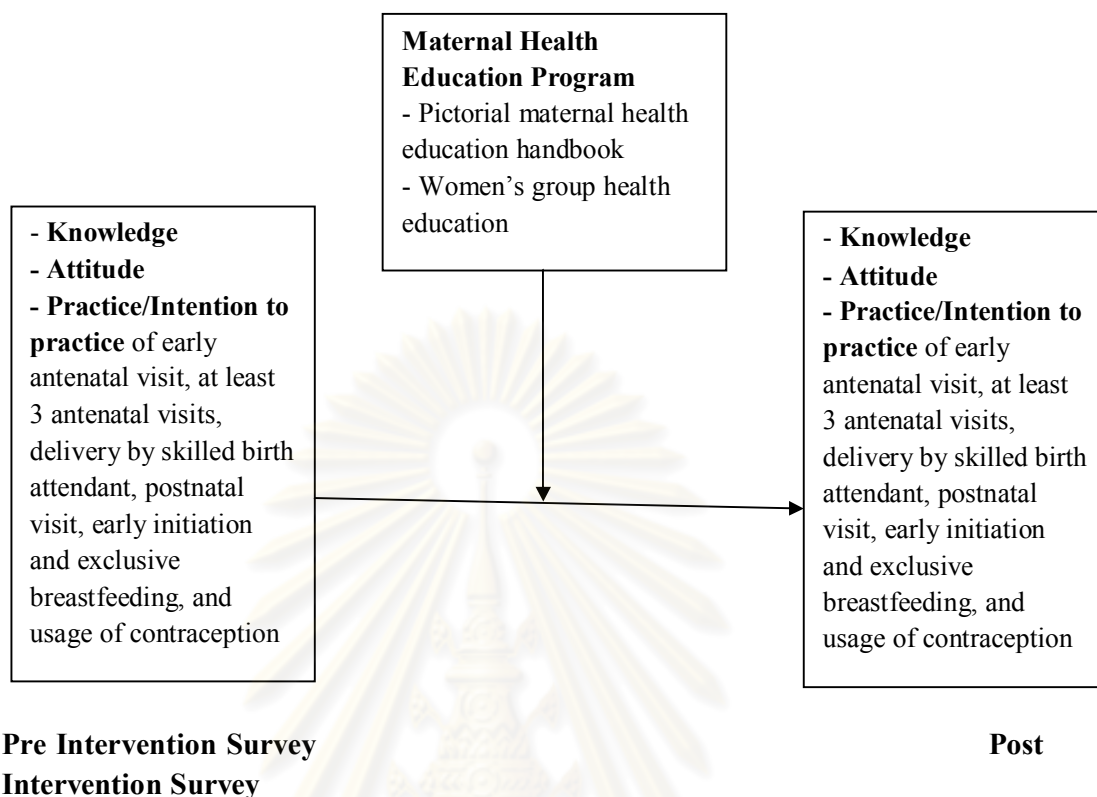
3.3 Study Population

Pa-O women of age 15 - 49 years residing in Lone Chin, Tee Lone and Lone War (Kyout Ngat) villages were studied.

3.4 Research Design

Participatory Action Research using qualitative and quantitative approaches was used.

One group pretest post test design was used to evaluate the effectiveness of maternal health education program.



3.5 Project procedures

Phase I: Preparation Phase

Active contact with the community leaders, village leaders, village leadership team, health committee and other key persons was carried out in the communities in 3 villages. The rapport was built up with the people in the community and research team. Population of reproductive age women was updated and acquired from each village.

Training of facilitators

Objectives

- To train the facilitators for **good interpersonal communication and facilitating skill** which in turns building up the self efficacy.
- To produce the facilitators who can **be able to organize and make an effective community meeting**.
- To produce the facilitators who can **be able to make an efficient training of village health volunteers**.

Three facilitators from 3 villages were identified. The facilitators were selected based on the following criteria.

Inclusion criteria

- The woman who is accepted by the community.
- The woman who is permanent resident of the village and has prestige in the community.
- The woman who is above 18 years old.
- The woman who passed middle school or has higher education.
- The woman who is willing to join in the program.
- The woman who has free time working for program.

The training of the facilitators was conducted by the researcher and medical officer from Shanta Foundation with the support of senior program officer who has ability to build up maternal and child health education content and training method and who is working in Maternal and Child Health via Rural Outreach Project of Relief International (Myanmar).

The facilitators participated in 5 days training and they were tested before and after the training to ensure that they had mastered lesson content and delivery strategies prior to study implementation. The activities of facilitators were monitored by the researcher and medical officer from Shanta Foundation.

Phase II: Pre intervention Data Collection

Three PaO women who have at least middle education were trained as interviewer for pre and post intervention data collection. These women were trained for communication skills, probing skills and some other important skills for making a good interview. Furthermore, guideline was used for conducting the interview.

Pre intervention survey was conducted by using structured questionnaire in PaO language and face to face interview among reproductive age women in 3 villages. Knowledge, attitude and practice/intention to practice concerning maternal health in antenatal, delivery and postnatal period including breastfeeding, and family planning of the reproductive age women were assessed.

Phase III: Activity Plan and Implementation

All the activities were carried out through participatory approach and the activity plan was divided into 4 stages. The first stage was to establish the program's committee, the second stage was to establish maternal health education program, the third stage was the training of community health volunteers and development of pictorial maternal health education handbook, and the fourth stage was the implementation of maternal health education program.

Stage 3.1: Establish participatory maternal health education program committee

Before starting the maternal health education program, a meeting with a focus on orientating the community committee was employed to understand the methods and benefits of the participatory research approach. Meetings with community leader, village leadership team, health committee, traditional birth attendants, auxiliary midwife and target women were carried out for setting up the program's committee. Researcher, medical officer from Shanta Foundation and facilitators facilitated for establishing of maternal health education program's committee.

The program committee will comprise of

- Village leaders from each village
- Health committee members from each village
- Auxiliary midwife
- Traditional birth attendants from each village
- Reproductive age women

Stage 3.2: Establish maternal health education program

Meetings with program's committee were carried out several times for the establishment of participatory maternal health education program and also throughout the health education program.

Step 1: Problem identification and diagnosis

Meeting was conducted with the aim of explaining the purpose and utility of the program and also for obtaining their support and cooperation in the successful implementation of the program.

The existing problems concerning maternal health during pregnancy and postnatal period including breastfeeding practice and family planning practice were identified. Moreover, current perceptions of the problem were described, so the problem was understood from different perspectives and these perspectives were basis for implementation of participatory maternal health education program.

Step 2: Problem analysis

The problems identified were analyzed; and short and long term solutions for solving these problems were discussed. The priority activities to solve the problems were established and set.

Step 3: Mobilize support of the community

The necessity for participatory maternal health education program, goals, objectives and implementation strategies of participatory maternal health education program were discussed. Internal and external resources for administering the participatory maternal health education program were determined. Furthermore, personnel responsibilities, networking, monitoring and evaluation and the budget were conferred.

The village health volunteers were identified and the opinion on pictorial maternal health education handbook which was used for participatory maternal health education program was gathered from the meeting.

Step 4: Monitoring and evaluation

The new issues and problems occurred during implementation of health education program, the effectiveness of the program and the community participation were discussed in monthly ongoing meetings, especially the problems which must be solved in order to improve the health education program; these were lesson learnt from the experience.

Stage 3.3: Development of Pictorial maternal health education handbook and training of village health volunteers

- *Development of Pictorial maternal health education handbook*

Pictorial maternal health education handbook was developed with the discussion of the women of reproductive age in the community for understanding insight of the knowledge, attitude and practices on maternal health and family planning. Moreover, meeting with participatory maternal health education program's committee was conducted to discuss the opinion and suggestion for developing and to pretest the handbook. The handbook was developed as pictorial health education handbook in culturally and locally appropriate terms with illustrations which was suitable for ethnic group and illiterate women. Handbook was also printed in bilingual such as Myanmar and Pao languages.

The Pictorial maternal health education handbook was addressing the following topics.

- Antenatal, delivery and postnatal care (danger signs, diet, hygiene, antenatal check up and tetanus vaccination, and safe and clean delivery)
- Breastfeeding
- Family planning

Pretesting of the pictorial maternal health educational handbook

The Pictorial maternal health education handbook was pretested with the reproductive age women, traditional birth attendants and auxiliary midwife for the clarity, cultural appropriateness and language used before production. Moreover, the reading level of the printed materials was pilot tested to ensure its appropriateness for the target population.

The pictorial maternal health education handbook was reviewed and revised before distributing to the women.

- *Training of village health volunteers*

5 to 7 village health volunteers were selected from each village depends on availability and nominating by the community.

The criteria for recruiting the village health volunteers were as follow.

- The woman who is permanent resident of the village and has prestige in the community.
- The woman who is willing to join in the program.
- The woman who is literate or higher education.
- The woman who is accepted and selected by the community.
- The woman who has free time working for program.

The training session was conducted in PaO language with the aim of producing the efficient village health volunteers.

The objectives of the training were as follows.

- To train the village health volunteers for **good interpersonal communication and facilitating skill** which in turns building up the self efficacy.
- To produce the village health volunteers who can **be able to organize and make an effective group health education session** and can handle group communication and group dynamics well.
- To **distribute the pictorial maternal health education handbooks** to women and use the educational handbook effectively in communicating with women.

The village health volunteers were trained not only to provide information on maternal health care but also to encouraging women to ask questions and raise personal concerns about their health. The village health volunteers could be able to motivate the subject to take positive control of her life and by learning to understand health needs.

The training session covered the following topics.

- Antenatal, delivery and postnatal care (danger signs, diet, hygiene, antenatal check up and tetanus vaccination, and safe and clean delivery)
- Breastfeeding

- Family planning
- Facilitating and communicating skills

Responsibilities of village health volunteers were as follow.

- Doing the women's group education session.
- Distributing the educational handbooks to women during group education.
- Monitoring the women for using pictorial education handbook and participating group education session.

Stage 3.4: Implementation of participatory maternal health education program

In order to achieve the goals of health education program, all women (about 300) received service of the participatory maternal health education program. There were approximately 100 women in each village and women were grouped into 3 - 5 groups depending on the location of household clusters for more convenient of implementation and monitoring. Each village health volunteer was responsible for 15 to 20 women.

Women's group health education

Women were invited to attend the group education session which was held in women's home, village leader's home or VHV's home.

The women's group education session included 3 to 5 participants and it took about an hour. Maternal health education handbook was given to women and short presentation was conducted by village health volunteer by using maternal health education handbook.

Pregnancy care was told in the first session of group education; and the second session will cover breastfeeding and family planning. The village health volunteer made a booster session with the women who completed the two session covering three topics. Therefore, all women attended for 3 sessions. The regular health education course was held in every week and the announcement of schedule was made in the village via village leaders, traditional birth attendants, village health committee's members and village health volunteers.

Phase IV: Monitoring and evaluation of participatory maternal health education program

Monitoring and process evaluation of participatory maternal health education program

Monitors

Participatory maternal health education program committee was the key agent for monitoring and process evaluation. This included:

- Facilitators
- Auxiliary midwife
- Village health committee's members
- Village health volunteers
- Medical officer who is working in the program villages
- Researcher

Responsible person	Tasks
Facilitators and Village health committee's members	<ol style="list-style-type: none"> 1. Monitored the village health volunteers' accomplishment. 2. Checked the monitored book weekly.
Auxiliary midwife	<ol style="list-style-type: none"> 1. Checked the monitored book weekly. 2. Made group discussion with women for evaluation.
Medical officer and Researcher	<ol style="list-style-type: none"> 1. Checked the monitored book weekly. 2. Made group discussion with women for evaluation. 3. Supervised the facilitators and auxiliary midwives doing group discussion with women for evaluation.

Actions of monitors

- (a) The village health volunteers filled the monitor book after every group health education session.

The monitor book included the followings:

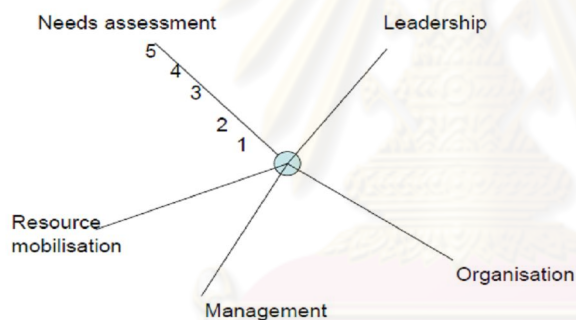
- Name, age, address of women.
- Number of group health education sessions carried out.

- Number of women who received maternal health education handbook and attended group education session.
 - Personal details of women who received maternal health education handbook.
 - Personal details of women who received group education by village health volunteers.
 - Personal details who does not attend group education sessions and the reason for not attending.
- (b) A woman from each course was selected for further focus group discussion. About 7-9 women were recruited for group evaluation discussion and their recall of the health education course and any concern or suggestions were asked.
- (c) The researcher, medical officer and auxiliary midwife observed facilitators and village health volunteers with participants and rate facilitator's and village health volunteer's professionalism, rapport, interpersonal skills and adherence to participatory maternal health education program.
- (d) The focus group discussion was conducted with village health volunteers for evaluating their volunteer work, their activities related to maternal health education, monitoring and reporting throughout the participatory maternal health education program, their satisfaction, problems faced during the health education program and the suggestion.
- (e) Feedback meeting
- Every month, meeting was undertaken with the village leaders, village health volunteers, auxiliary midwife, village health committee members, women of reproductive age and medical officer in order to monitor the program and the community participation.
- (f) In-depth interview with health committee member, traditional birth attendants, and auxiliary midwife were conducted to seek the questions about their opinion, concern and suggestion to participatory maternal health education program.

Assessment of community participation (See Annex G)

Activity (1): Number of participants (participatory maternal health education program's committee) engaged in every meeting since problem identification until the monitoring and evaluation were recorded.

Activity (2): Rifkin and coworkers identified five dimensions influencing participation that could be incorporated into an analytical pentagram framework: needs assessment, leadership, resource mobilization, management and organization. For each factor, a five-point ranking scale that measures the degree of participation is provided, ranging from minimal (ranked 1) to maximal (ranked 5) with three levels in between of restricted (ranked 2), fair (ranked 3) and open (ranked 4) (Eyre R & Gauld R. 2003).



Needs assessment is the process in which partners who plan the program can determine what problem might exist in a group of reproductive age women.

Leadership refers to whom the existing leadership representatives and how does the leadership act on the interest of various community group. The indicator moves toward the wider end if the leadership represents the variety of interest group of all partners.

Organization: The program which has been created by community organization will see the indicator for this activity placed at the end of the continuum.

Resource mobilization is a symbol of commitment to a program. Participatory maternal health education program committee has role to decide on allocations according to the existing resources.

Management refers to management of the program. Decision and management structures favored by participatory maternal health education program committee indicate wide range of participation.

Level of participation was assessed at the beginning of the program and by the end of the program. Group discussion was conducted to monitor the community participation in five key areas such as needs assessment, leadership, resource mobilization, management, and organization.

Participants

- Village leaders from each village
- Auxiliary midwife
- Members of health committee from each village
- Traditional birth attendants
- Village health volunteers
- Women of reproductive age

Outcome evaluation

Quantitative data collection (Post intervention survey)

One group pre-test post-test design was used to evaluate the effectiveness of the health education program. A structured questionnaire was administered and face to face interview was used to collect quantitative data.

Post intervention survey was done 6 months after implementing the health education program among reproductive age women to assess the improvement in knowledge, attitude and practice/intention to practice of maternal health care in antenatal, delivery and postnatal period including breastfeeding and family planning.

3.6 Data Collection

3.6.1 Qualitative Data Collection

Sampling

Purposive sampling was used for recruiting the respondents in qualitative data collection.

Individual In-depth Interviews (See Annex D)

In-Depth Interviews with the key informants such as members of health committee, traditional birth attendants, and auxiliary midwife were employed to seek to questions regarding their opinion, concern and suggestion on the participatory maternal health education program.

Auxiliary midwife were asked to participate in individual in-depth interview. One person from members of health committee and traditional birth attendants were chosen from each of 3 villages.

Guideline was prepared and each individual in-depth interview will take around 45 minutes to one hour. The interview was taped with the consent of the participants and note taker will record the data.

Focus Group Discussions (FGDs)

Focus Group Discussions (FGDs) with the reproductive age women (See Annex B & C)

Focus Group Discussions were utilized for getting detailed qualitative information from the women of reproductive age about knowledge, attitude and practice on maternal health care, breastfeeding, and family planning which was used for developing culturally and locally appropriate pictorial maternal health education handbook.

In addition, FGDs were employed with the women for evaluating the participatory maternal health education program by discussing their recall of the health education course, pictorial maternal health education handbook and any concern or suggestions for the participatory maternal health education program.

8 – 12 women of reproductive age participated in each FGD.

FGD guideline prepared and each FGD took about 2 hours. The discussion was taped with the written consent of the participants and note taker recorded the data.

The selection of the participants was based on the following criteria:

Inclusion Criteria

- Woman who is 15-49 years of age.
- Woman who is willing to participate.
- Residing in one of three villages.
- Participated in participatory maternal health education program.

Exclusion Criteria

- Women who are not mentally sound.
- Women who have hearing and speech disability.
- Women who engage with severe illnesses.

Focus Group Discussions (FGD) with the Village Health Volunteers (See Annex E)

Three focus group discussions were conducted with village health volunteers for evaluating their volunteer work, awareness of maternal health, their activities related to maternal health education, monitoring and reporting throughout the participatory maternal health education program, their satisfaction, problems faced during the health education program and the suggestion.

Village health volunteers from each of study village participated.

FGD guideline was prepared and it took about 1 ½ to 2 hours. The discussion was taped with the written consent of the participants and note taker recorded the data.

3.6.2 Quantitative Data Collection

Data Collection Tools (See Annex A)

The questionnaire was developed in English and translated back into Burmese language, then translated into PaO language.

The questionnaire included socio-demographic characteristics of the respondent, knowledge, attitude and practice/intention to practice concerning maternal health in antenatal, delivery and postnatal period, breastfeeding, and family planning.

Data Collection Method

Individual face to face interview was used. The interviewer read the questionnaire to the participants and asked for their answer.

Reliability and validity

The questionnaire was pretested and 30 reproductive age women were asked for pretesting. Cronbach's alpha coefficient was calculated to measure reliability of the data collection tool. The Cronbach's alpha coefficient was 0.7. Moreover, the content validity and face validity was checked by experts after constructing the draft questionnaire. The questionnaire was revised after testing reliability and validity.

Sample size and sampling

There are about 300 women of reproductive age 15-49 in all three villages.

In this study, census was used for pre and post intervention survey.

Selection of respondents

Inclusion Criteria

- Woman who is 15-49 years of age.
- Woman who is willing to participate.
- Residing in one of three villages.
- Participated in participatory maternal health education program.

Exclusion Criteria

- Women who are not mentally sound.
- Women who have hearing and speech difficulty.

- Women who engage with severe illnesses.

Phase V: Analysis and reporting of findings

3.7 Data Analysis

3.7.1 Qualitative Data Analysis

The data obtained from the in-depth interview and focus group discussion through tape recorder was transcribed and crosschecked with respondents before translating them into English. Translation into English language was done by researcher and was checked for consistency before finalization. The data was coded, cleansed and then analyzed. Content analysis was used.

3.7.2 Quantitative Data Analysis

The questionnaire was coded before entering to the computer. Double entry was done and SPSS software was used for data analysis. Descriptive statistics such as mean, standard deviation, median and range were determined. Paired T-test and Wilcoxon Signed Rank test was used to compare the difference of knowledge and attitude at pre and post intervention. McNemar's test was used to compare the difference of categorical variables at pre and post intervention. The level of significance was set at 0.05.

For knowledge and attitude variable, several questions concerning about the opinion of respondents were asked. The score was given according to the respondent's answer and then the scores were summed up.

The knowledge part consisted of 19 questions and the score is 1 for correct answer and 0 for incorrect answer. The highest score was 19 and the lowest was 0. The level of knowledge was categorized into three groups:

- High knowledge: > 80% of total score
- Moderate knowledge: 60% - 80% of total score
- Low knowledge: < 60% of total score

Attitude was measured in 3 categories according to the Likert scale (McDowel & Newell, 1996). The attitude part consisted of 13 questions and the questions consisted of both negative and positive aspects. For positive questions, the score was given 3 for agree, 2 for uncertain, 1 for disagree. For negative questions, the score

was given 3 for disagree, 2 for uncertain, 1 for agree. The highest score was 39 and the lowest score was 13. The level of attitude was divided into 3 levels such as:

- High attitude: > 80% of total score
- Moderate attitude: 60% - 80% of total score
- Low attitude: < 60% of total score

3.8 Ethical Consideration

Both in quantitative and qualitative data collection, the purpose of survey was explained before interview and oral consent was taken from each respondent.

The respondents were feel free to participate or withdrawal any time throughout the interview. Privacy was maintained throughout the interview. The name of the respondent was not recorded and data was coded in survey questionnaire. All the data was kept confidentially and none of the questionnaire could be traced back to the respondents.

Ethical approval was acquired from Ethical Review Board, Chulalongkorn University.



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CHAPTER IV

RESULTS

This chapter included the analysis and interpretation of the data obtained and analysis based on the quantitative data obtained from 257 women of reproductive age and qualitative data gathered from reproductive age women, health committees, traditional birth attendants, auxiliary midwife and participatory maternal health education program committee. The results were presented into three sections; the first section showed quantitative study, second section described qualitative study, and the third section presented the assessment of community participation.

The first section described the quantitative analysis of pre-intervention and post intervention finding of the study.

4.1. Quantitative Study

One group pre-test post-test design was used to evaluate the effectiveness of health education program using pictorial handbook for improving knowledge, attitude and practice regarding maternal health care in antenatal, delivery and postnatal period, breastfeeding and family planning in PaO ethnic group in Myanmar. Face to face interview using structured questionnaire was employed for collecting quantitative data. Follow up survey was conducted 6 months after implementing the health education program.

In this section, analysis was divided into two parts as (1) pre-intervention findings of reproductive age women and (2) effectiveness of participatory maternal health education program by presenting the post intervention follow-up findings of knowledge, attitude and practice of maternal health care in antenatal, delivery, postnatal period, breastfeeding and family planning and comparison of these with pre-intervention findings. Total 257 reproductive age women participated in this study and their socio-economic characteristics, fertility background and source of information regarding maternal health care were presented as follow.

4.1.1. Pre-intervention findings of reproductive age women

Pre-intervention findings obtained from the reproductive age women were presented as below. The participants in this study were the women of reproductive age between 15 – 49 years who were residing in three PaO villages in Shan State in Myanmar.

4.1.1.1. Socio-economic characteristics

This part showed the frequency distribution of selected variables describing background characteristics of the women. Table 4.1 revealed socio-economic characteristics such as age, religion, marital status, education, husband's education, occupation, average family income per month in kyat and Burmese language skill.

All the women were in the age ranged from 15 to 48 years which was within reproductive age that set as inclusion criteria. The mean age was 30.47 and proportion of the women was fairly distributed across all age groups. All of the women proclaimed Buddhism as their religion. Majority of the women were married (80.2%) and only 3.5% were single. For educational attainment, few of them (14.6%) never attended school and more than half of the women (52.5%) completed primary education. Similarly, more than half of their husbands (53.9%) had primary education and few of them (14.6%) never attended school. Most of the women (68.9%) were gardener who grew sebesten leaves, onion, garlic and vegetables. The level of economic status had been assessed on the basic of monthly total family income in kyat. While total monthly family income ranged from 1000 (1.3 US\$) to 100,000 (130 US\$) kyat, more than half of the women had monthly family income less than 10000 kyat (15 US\$). For Burmese language skill, almost half of the women (45.9%) cannot communicate at all and only one fourth of the women were fluent in all three skills.

Table 4.1: Socio-economic Characteristics (n=257)

Variables	Frequency	Percentage
Age		
15 – 24	74	28.8%
25 – 34	91	35.4%
35 – 49	92	35.8%
Range = 15 – 48, Mean = 30.5, SD = 9.23		
Religion		
Buddhist	257	100%
Marital status		
Married	206	80.2%
Single	42	3.5%
Divorced, Widowed	9	16.3%
Education		
Never go to school	38	14.8%
Primary education	135	52.5%
Secondary education	70	27.2%
High school	11	4.3%
Higher education (Diploma, University)	3	1.2%
Husband's education (n = 213)		
Never go to school	31	14.6%
Primary education	115	53.9%
Secondary education	59	27.7%
High school	8	3.8%
Occupation		
Housewife	33	12.8%
Farmer	40	15.6%
Gardener	177	68.9%
Others (Teacher, Student, Merchant)	7	2.8%
Average family income per month (kyats)		
≤10000 (≤15 US\$)	134	52.1%
10001 – 20000 (15-25 US\$)	46	17.9%
20001 – 30000 (25-35 US\$)	36	14.0%
>30000 (>35 US\$)	41	16.0%
Range = 1000 (1.3US\$) – 100,000 (130US\$), Mean = 18852.1, SD = 17644.31		
Burmese language skill		
Cannot communicate at all	118	45.9%
Can speak fluently but cannot read and write	68	26.5%
Fluently in Burmese language (speaking, writing, reading)	71	27.6%

4.1.1.2. Fertility background

Fertility background of the reproductive age women who were ever married and currently married was determined in table 4.2. Although age at first marriage ranged from 14 to 34 years old, majority of the women (75.3%) got married age between 14 and 20 years as early marriage is characteristics of rural women. Majority of the women (96.3%) ever been pregnant and nearly half of the women experienced 4 times or more of being pregnant. More than one third (39.1%) of them experienced abortion when 16.4% had history of child death. Half of the women had less than 2 children, however, the number of children ranged from 1 to 8.

Table 4.2: Fertility Related Characteristics

Variables	Frequency	Percentage
Age at first marriage (n = 215)		
14 – 20	162	75.3%
21 – 25	38	17.7%
25 – 49	15	7.0%
Range = 14 – 34, Mean = 19.5, SD = 3.29		
History of pregnancy (n = 215)		
Yes	207	96.3%
No	8	3.7%
Number of pregnancy (n = 207)		
1	45	21.7%
2	41	19.8%
3	34	16.5%
4	29	14.0%
>4	58	28.0%
Range = 1 – 12, Mean = 3.5, SD = 2.25		
History of abortion (n = 207)		
Yes	81	39.1%
No	126	60.9%
Number of abortion (n = 81)		
1	56	69.1%
2	17	21.0%
3	8	9.9%
History of child death (n = 207)		
Yes	34	16.4%
No	173	83.6%

Table 4.2: (Continued) Fertility Related Characteristics

Variables	Frequency	Percentage
Number of child death (n = 34)		
1	29	85.3%
2	2	5.9%
3	3	8.8%
Number of child alive (n = 197)		
1	47	23.9%
2	58	29.4%
3	36	18.3%
4	26	13.2%
>4	30	15.2%
Range = 1 – 8, Mean = 2.8, SD = 1.65		

4.1.1.3. Source of information regarding maternal health care

Places from which reproductive age women received knowledge regarding maternal health care including antenatal care, delivery, postnatal care, breastfeeding and family planning were described in table 4.3. Almost half of the women (41.6%) stated that they got knowledge regarding maternal health care from their relative and friends mainly while one third of them (36.2%) mentioned the primary source was health professionals.

Table 4.3: Channels from which reproductive age women received knowledge of antenatal care, delivery, postnatal care, breastfeeding and family planning (n = 257)

Variables	Frequency	Percentage
Relatives and friends	107	41.6%
Directly from health professionals	93	36.2%
Parents	25	9.7%
Health education materials taken from hospitals	20	7.8%
Books and magazines	3	1.2%
Television and radio	2	0.8%
School	2	0.8%

Multiple responses allowed

Accessibility is one of the important factors that influence to women in obtaining information on maternal health care, decision making and practicing maternal health care in antenatal, delivery and postnatal period, breastfeeding and

family planning. Referred to table 4.4, even though more than one third (39.7%) of the reproductive age women ever seen health education materials such as pamphlets or handbooks, 25.3% ever received those materials and few of them (8.6%) ever attended health education training.

Table 4.4: Accessibility to health education materials and training (n = 257)

Variables	Frequency	Percentage
Ever seen health education pamphlets or handbooks	102	39.7%
Ever received health education pamphlets or handbooks	65	25.3%
Ever attended health education training	22	8.6%

4.1.2. Effectiveness of participatory maternal health education program

Effectiveness of participatory maternal health education program using pictorial maternal health education handbook was assessed by comparing knowledge, attitude and practice regarding maternal health care in antenatal, delivery and postnatal period, breastfeeding and family planning at pre and post intervention.

4.1.2.1. Knowledge and Attitude towards maternal health care pre and post intervention

Table 4.5 showed reproductive age women's knowledge concerning antenatal care, delivery and postnatal care, breastfeeding and family planning at pre and post intervention. Percentage of reproductive age women who answered correctly to knowledge items of antenatal care, delivery, postnatal care, breastfeeding and family planning were determined as follow.

Table 4.5: Percentage of women answered correctly to knowledge items (n = 257)

No	Statement	Correct response	
		Pre-Intervention	Post Intervention
1	Antenatal care (8 items)	60.6%	94.5%
2	Delivery (1 item)	87.9%	97.7%
3	Postnatal care (1 item)	79.8%	95.3%
4	Breastfeeding (5 items)	77.9%	95.4%
5	Family planning (4 items)	83.6%	98.1%

Most of the women could answer correctly to the statements regarding knowledge in pre-intervention survey, however, the percentage of correct response increased in all parts of knowledge. Details of the women's response in each knowledge item were determined in appendix K.

Percentage of correct response to attitude regarding prenatal care, delivery and postnatal care, breastfeeding and family planning at pre and post intervention was shown in table 4.6. The percentage of women who gave correct response to all parts of attitude was increased in post intervention. Details of the women's response in each attitude item were determined in appendix L.

Table 4.6: Percentage of women gave correct response to attitude items (n = 257)

No	Statement	Correct response	
		Pre-Intervention	Post Intervention
1	Antenatal care (2 items)	41.1%	67.1%
2	Delivery (1 item)	32.7%	61.1%
3	Postnatal care (3 items)	67.6%	84.4%
4	Breastfeeding (4 items)	50.1%	58.7%
5	Family planning (3 items)	63.7%	72.3%

Table 4.7 described the level of knowledge and attitude towards maternal health care in three categories such as high, moderate and low. Majority of the women (70.3%) had low knowledge while 39.7% had high. Similarly, more than two-third of the women (82.5%) had low attitude when only 17.5% had high attitude.

Table 4.7: Level of knowledge and attitude towards maternal health care in pre-intervention

	Variables	Frequency (%)
Knowledge	High	102 (39.7%)
	Moderate	111 (43.2%)
	Low	44 (17.1%)
Attitude	High	45 (17.5%)
	Moderate	194 (75.5%)
	Low	18 (7.0%)

Table 4.8 revealed the changes of knowledge and attitude concerning maternal health care such as antenatal care, safe and clean delivery, postnatal care, breastfeeding and family planning pre and post intervention. Wilcoxon Signed Rank test was used to determine the difference between knowledge of reproductive age women and it revealed that the knowledge was significantly increased post intervention with p-value <0.001. Moreover, significant increased in mean score of attitude of reproductive age women post intervention was determined by Paired samples T-test.

Table 4.8: Knowledge and attitude of maternal health care pre and post intervention (n = 257)

Variables	Pre-Intervention		Post Intervention		p-value
	Range	Mean (SD)	Range	Mean (SD)	
Knowledge	0 – 18	13.9 (4.18)	0 – 18	16.5 (2.27)	< 0.001
Attitude	21 – 38	28.4 (3.64)	18 – 39	32.1 (4.67)	< 0.001

4.1.2.2. Maternal health care practices pre and post intervention

The changes of intention to practice maternal health care in pre and post intervention were analyzed by using Mc-Nemar chi-square test. Table 4.9 determined the intention to practice of antenatal care, skilled birth attendants, postnatal care, breastfeeding and family planning of reproductive age women in pre and post intervention.

Intention to practice antenatal care in terms of antenatal visit with health professional within first 3 months of pregnancy and having at least three antenatal

visits during pregnancy were significantly increased post intervention with p-value <0.001. Likewise, intention to have skilled birth attendants for delivery and postnatal checkup with health professional were also significantly increased at post intervention.

Intention to practice of early initiation and exclusive breastfeeding and feeding colostrums were significantly increased with p-value <0.001. Although feeding water to baby during first 4 months was very common in PaO ethnic group, intention to do that practice was significantly reduced in post intervention. In regards to contraceptive used, usage of any method of contraception was not significantly different among married women pre and post intervention, however, in post intervention, intention to use of any contraceptive method was significantly increased among the women who are not currently married.

Table 4.9: Change in intention to practice regarding maternal health care pre and post intervention (n = 257)

Variables	Pre-intervention	Post intervention	Mc-Nemar X²	p-value
Intend to have antenatal visit with health professional within first 3 months of pregnancy				
Yes	193 (75.1%)	252 (98.1%)	55.148	<0.001
No	64 (24.9%)	5 (1.9%)		
Intend to have at least 3 antenatal visits				
Yes	216 (84.0%)	250 (97.3%)	27.225	<0.001
No	41 (16.0%)	7 (2.7%)		
Intend to have skilled birth assistants (doctor/AMW/MW/trained TBA)				
Yes	104 (40.5%)	168 (65.4%)	45.102	<0.001
No	153 (59.5%)	89 (34.6%)		

Table 4.9: (Continued) Change in intention to practice regarding maternal health care pre and post intervention (n = 257)

Variables	Pre-intervention	Post intervention	Mc-Nemar X ²	p-value
Intend to have postnatal check up with health professionals				
Yes	139 (54.1%)	241 (93.8%)	87.940	<0.001
No	118 (45.9%)	16 (6.2%)		
Intend to have early initiation of breastfeeding				
Within 1 hour	156 (60.7%)	248 (96.5%)	86.26	<0.001
After 1 hour	101 (39.3%)	9 (3.5%)		
Intend to feed the baby with colostrums				
Yes	121 (47.1%)	250 (97.3%)	127.008	<0.001
No	136 (52.9%)	7 (2.7%)		
Intend to feed water to baby during first 4 months				
Yes	186 (72.4%)	52 (20.2%)	113.391	<0.001
No	71 (27.6%)	205 (79.8%)		
Intend to have exclusive breastfeeding up to 4 months				
Yes	207 (80.5%)	253 (98.4%)	44.022	<0.001
No	50 (19.5%)	4 (1.6%)		
Practice of contraception among married women (n = 206)				
Using contraception	145 (70.4%)	156 (75.7%)	3.030	0.082
Not using contraception	61 (29.6%)	50 (24.3%)		
Intend to practice of contraception among currently not married women (n = 51)				
Yes	16 (31.3%)	26 (50.9%)		0.021
No	35 (68.7%)	25 (49.1%)		

Table 4.10 determined the result of informal interview with the women who had delivery after implementation of health education program. All the results were described in number because of the small sample size.

Table 4.10: Intention to practice/practice of maternal health care of women who delivered a baby at pre and post intervention (n = 11)

Variables	Pre-intervention	Post intervention
Had antenatal visit with health professional within first 3 months of pregnancy		
Yes	7	10
No	4	1
Had at least 3 antenatal visits		
Yes	11	10
No	0	1
Skilled birth assistants		
Yes	4	10
No	7	1
Had postnatal check up with health professionals		
Yes	7	10
No	4	1
Had early initiation of breastfeeding		
Within 1 hour after delivery	6	9
Within 1 day (after 1 hour) or after 1 day	5	2
Fed baby with yellowish color fluid prior to breast milk (colostrums)		
Yes	5	11
No	6	0

In post intervention, most of the women revealed that they practiced antenatal visit with health professionals within first three months of pregnancy and they had at least 3 antenatal visits. 10 out of 11 women stated that the delivery was assisted by skilled birth attendant mainly traditional birth attendants who were trained by NGO and only one woman was assisted by neighbor. Most of them had postnatal check up in post intervention and early initiation of breastfeeding. Even though more than half

of the women stated they never fed colostrums to baby, in post intervention, all of the women fed colostrums to newborn. The practice of nutrition and personal hygiene in antenatal and postnatal period were shown in appendix N.

Table 4.12 showed the different methods of family planning used by reproductive age married women. The proportion of usage of 3 month injection was increased from 39.3% to 46.5% while proportion of usage of IUD was decreased from 44.8% to 41% and the proportion of other methods was decreased from 15.9% to 12.2%.

Table 4.11: Different methods of family planning used by reproductive age married women in pre and post intervention

Variables	Pre-intervention (n = 145)	Post intervention (n = 156)
3 month Depo injection	57 (39.3%)	73 (46.8%)
IUD	65 (44.8%)	64 (41.0%)
Oral pills	18 (12.4%)	16 (10.3%)
Male condom	2 (1.4%)	2 (1.3%)
Female Sterilization	1 (0.7%)	1 (0.6%)
Natural method	2 (1.4%)	0 (0%)

The next section presents the qualitative analysis of focus group discussions and in-depth interviews of the study.

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4.2. Qualitative Study

Qualitative methods such as focus group discussions and individual in-depth interviews were employed for evaluation of participatory maternal health education program and its effectiveness. The number of respondents and their age range are presented in table 4.12.

Table 4.12: Characteristics of respondents to informal interviews

Methods	Participants	Number	Age Range (years)
Focus Group Discussion	Women	39	15 - 46
	Village health volunteers	18	17 - 45
In-depth Interviews	Health committee	3	34 - 44
	Traditional birth attendants	3	42 - 57
	Auxiliary midwife	1	24

4.2.1. Focus Group Discussions

One focus group discussion with reproductive age women was done. Five focus group discussions with the reproductive age women and three focus group discussions with village health volunteers were conducted aiming to evaluate the pictorial handbook, women's group health education sessions and the effectiveness of participatory maternal health education program.

4.2.1.1 Focus group discussion with reproductive age women (to describe knowledge, traditional beliefs and practice)

One focus group discussion with reproductive age women was carried out to describe the knowledge, traditional belief and practices for maternal health care and assess the utilization of maternal health care services in antenatal, intranatal and postnatal period among PaO women.

The age of women ranged from 18-45 years and all of them were married. They had primary education and household income less than 35 US\$ per month. The number of children was ranged from 1 - 7. All the participants stated that they had their first child at age less than 20 years.

Knowledge of pregnancy

Signs of pregnancy are understood as anorexia, vomiting and absence of menstruation. Most of them go and consult midwife, however, some of the women used UCG strip to confirm the pregnancy by themselves.

“When the period was absent, I thought I was pregnant. Then I bought UCG strip from grocery to confirm the pregnancy”. (mother 1)

“I feel lethargic and the period is absent, so I seek midwife in rural health centre and I was told that I am pregnant”. (mother 9)

“I didn’t know what the signs of pregnancy are. When I felt quickening, I consulted TBA and I was told that I was pregnant”. (mother 9)

Antenatal care

During antenatal period, most of them visited both midwife and untrained TBA. The first visit to health care providers such as doctor and midwife was done in 4-5 months of pregnancy. At the same time, they also seek TBAs.

“I seek midwife when I have 4 to 5 month pregnancy for antenatal care. Midwife checks blood pressure and position of the baby, give injection to the arm and vitamin supplements”. (mother 4)

Almost all of the pregnant women received at least one dose of Anti-tetanus Toxoid. Most of the women know that immunization is for prevention but they do not know exactly for what disease and they never ask midwife for what purpose.

Delivery practices

Birth planning was not practiced commonly and although all the risk pregnancy such as elderly primigravida, pregnancy with hypertension are referred to township hospital by doctor and auxiliary midwife, not all the pregnant women did not go due to financial restraint.

“I told the risk pregnancy to go and consult at township hospital for safer delivery but they didn’t pay attention and refused to go as they don’t want to stay at hospital and don’t have enough money”. (Auxiliary midwife)

Due to distance and unavailability of trained personnel, most of them gave birth at home with the assistance of untrained TBAs.

“I delivered the baby in the living room of my house where there is fire place to get warm. I called TBA to assist as it was more convenient and can save money.”(mother 4)

All of the women took traditional medicine when the labour pain occurred for easy delivery. The umbilical cord is usually cut with bamboo shelf and the traditional medicinal powder was applied to umbilicus as advised by TBAs.

Postnatal care

The health care providers said that it was rare to have a postnatal visit as they think only sick mother needs to seek the doctor or auxiliary midwife. Women never visited TBAs for postnatal care.

All the women stayed at home for 1 to 2 months after delivery. Traditional medicine was always taken for enhancing milk secretion. All of them did not have bath until 7 days after delivery as they believed that women are very weak in puerperial period. After 7 days, they used boiling water of ginger-like herb (mate tha lin) for bathing until 3 days.

“Women should not have bath 7 days after delivery. Because women are very weak at that time and if she have shower, she will get cold very often in her life. Moreover, women’s blood is changed and she becomes sensitive to get diseases.” (mother 5)

However the practice of traditional induced sweating is widely used and all of the women applied dried turmeric powder all over the body. Traditional medicinal liquid was poured over heated brick and then the woman who was wrapped with blanket sat on the brick. This was believed to be good for adjusting body mechanisms as they thought women needed heat after delivery.

Dietary practices and Vitamin supplements

Food restriction was common in PaO women during antenatal and postnatal period as they have belief of retained placenta, difficult delivery, having skin diseases, susceptible to cold and indigestion in baby. Fish and vegetables which are long in shape were restricted during pregnancy due to the belief of retained placenta.

“When I was pregnant, I avoided egg plants, jack fruits and banana as it was thought to cause difficult delivery, retained placenta and make big baby. Apart from that I ate all food and didn’t reduce food intake.” (mother 1)

“I was told not to eat pork, beef, cauliflowers, mushroom and cucumber. Because the baby will get indigestion through breast milk. And I didn’t eat fish which in long shape because I will get skin disease for lifelong”. (mother 8)

Taking vitamins was practiced only in antenatal period as they thought it is not needed after child birth. However, all the women had more food in postnatal period apart from restriction of some vegetables such as cabbage, cucumber, mushroom and bamboo shoot for one year.

Workload

No reduction of workload during pregnancy and most of the women do agricultural tasks such as reaping grass and pricking sebesten leaves. However, some women said work load was reduced in third trimester. All the women didn’t do farm works during postnatal period of 45 days.

“I have 7 month pregnancy but I do not get rest as I am working in my own farm”. (mother 9)

“When I was pregnant, I was still working in my own farm and other people’s farm as daily wages worker. I took a rest when I had labor pain and then delivered a baby. I didn’t do anything apart from household chores in puerperial period and my husband helped me”. (mother 6)

Breast Feeding

Auxiliary midwife and doctor asked to start breastfeeding soon after delivery. Early initiation of breastfeeding within first hour after delivery was practiced in all women. But some women wiped the colostrums with the clothes because the reason of yellow color and perception of causing diarrhea in the baby.

“I wiped the colostrums with the clothes because I think it is not good as the color is yellow and it is not like milk. It can cause diarrhea to the baby”. (mother 7)

Exclusive breastfeeding was not practiced and all women believed because milk production is not sufficient for the baby especially in one to seven days after delivery, boiled rice or chewed rice was given. Most of the women continued breast feeding when the mother is sick, however, some women stopped feeding breast milk because they believe that breast milk will pass infection to baby.



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4.2.1.2. Focus group discussions with reproductive age women (for evaluation of participatory maternal health education program)

Five focus group discussions were employed with the women of reproductive age for evaluating the participatory maternal health education program by discussing their recall of the health education course, pictorial maternal health education handbook and any concern or suggestions for the participatory maternal health education program.

4.2.1.2.1. Pictorial maternal health education handbook

Content of the book

All of the women had pictorial maternal health education handbook and they could mention the content of the handbook such as two stories, danger signs, antenatal care, safe and clean delivery, postnatal care, family planning and breastfeeding. Most of them were still reading and sharing knowledge to women from other PaO villages because they thought the handbook was interesting and all of health messages were necessary for every woman.

“I felt very sad when I read story about Ma Nan Phyu who died because of lack of birth preparedness. Now I know it is very important and I will tell my daughters and sisters to take antenatal care when they are pregnant.” (39 years old married women) (VL2)

Satisfaction

Most of the women described the pictorial health education handbook as simple, easy to understand the pictures and health messages. All of them were satisfied the handbook because health messages were written in both PaO and Myanmar language, health information were described in words as well as pictures, and there were two stories which highlighted the life of rural women which they never paid attention before.

“The book was really good because all the health messages were written in PaO language and I could read it. There were pictures so it is easy to understand for me. I

should have that book when I had only three children.” (30 years old married woman) (VL1)

4.2.1.2.2. Women’s group health education session

Place and time

All of the women were informed place and time for group education in advance. Most were informed by VHV when some were contacted by TBA. Most of the women attended health education session in their home or other women’s home, some mentioned that they were gathered in VHV’s home, village leader’s home and TBA’s home. Most of the women gathered in the morning before going to their farms, and some attended in religious days when they were free.

Problems

All women mentioned that VHVs used handbook and distributed to women, explained one topic after another; and VHVs also tried to clarify the health messages. Women were also asked the problems faced for attending health education sessions, mostly stated that they did not have any problems as their husbands, mother-in-laws and parents of single women agreed for attending.

Satisfaction

All of the women were satisfied of women’s group health education session and they were also asked why they were satisfied. The most common reason was getting chance to gather village women and share their knowledge and experience, followed by got knowledge about maternal health care and family planning that the women did not know before.

“If I had this kind of health education handbook and health education sessions before, I would not have many children like now.” (42 years old married woman) (VL1)

4.2.1.2.3. Awareness of maternal health

Importance of maternal health care

Most of the women stated signs of pregnancy as loss of menstruation, early morning sickness, frequent urination, quickening, loss of appetite in early months and breast enlargement. All of them perceived that antenatal and postnatal care was important. There were several reasons why these were important; the most commonly answered reason was notice of danger signs because it could harm both mother's and baby's life. The other reasons included getting ATT immunization, abdominal examination by health personnel and multivitamins, for easy and safe delivery; one woman mentioned about having STD test in antenatal care, could do child spacing and getting of multivitamin, immunization to newborn in postnatal period.

“PaO women never consulted health personnel in puerperial period. Now I know it's important for both mother and baby's health, so I will go and see midwife in next pregnancy.” (22 years old married woman) (VL2)

Danger signs in antenatal, delivery and puerperial period

All of the women could state at least one danger signs during antenatal, delivery and postnatal period and the most common sign stated was bleeding followed by headache, swollen foot, face and hands, fit and loss of consciousness, foul smelling discharge within 45 days after childbirth, severe abdominal pain before term, blurred vision, prolonged labour, tiredness, yellow coloration of skin and fever.

Feeding of colostrums

Most of the women stated that colostrums should be fed to new born because colostrums have nutrients and baby can get resistance, for the reason of healthy baby, and breastfeeding soon after delivery could promote expulsion of placenta.

“We usually wiped colostrums with clothes and never fed to newborn because of its yellow color, but when we got health education handbook and attended women's group health education sessions, we know it's important and needed for baby. I will encourage other women to feed the baby with colostrums.” (39 years old married women) (VL2)

Knowledge of contraception

All of the women stated at least two methods of contraception and the most commonly stated methods were 3 months Depo injection and oral pills followed by condom, IUD and female sterilization. Women were also asked about advantages and disadvantages of using contraception. They mentioned that they can save more money and can send all the children to school if they limit child by using contraceptive methods and irregular bleeding, heavy menstruation, headache, weight gain, vomiting as disadvantages of using contraception.

“I never knew that I had to feel the thread of IUD before. Now I knew and I felt it. I still have IUD and I’m safe now.” (30 years old married women) (VL1)

4.2.1.3 Focus group discussions with village health volunteers

The focus group discussion was conducted with village health volunteers for evaluating their volunteer work, their activities related to maternal health education, monitoring and reporting throughout the participatory maternal health education program, their satisfaction, problems faced during the health education program and the suggestion.

4.2.1.3.1. Volunteer work

Reasons to be a volunteer

VHVs were asked why they decided to be volunteers, and most of VHVs joined participatory maternal health education program because of their own interest, also nominated by health committee and village leaders, encouraged by doctors who is working in their village. Few of them mentioned that they were encouraged by their husband, they were dedicated to community development and do not need to work every day.

“I am dedicated to community development activities and I am also health committee member. When I was asked by doctor, I was really interested to work as volunteer and this was a big chance for attending training.” (38 years old married VHV) (VL1)

Satisfaction

Most of VHVs were satisfied of their volunteer work and they were also asked why they were satisfied. The most common reason was they could get knowledge and experience, volunteering in health education was a good deed, and few of them were satisfied because they could work in their free time.

Continuation of volunteer work

VHVs were also asked whether they would continue working as volunteer, motivation for continuing and reasons for not continuing. Most of them mentioned that they would continue to be volunteers and the main reason was their interest in health education and sharing knowledge, however, incentives, further trainings and health education materials such as booklets and pamphlets were stated as need to motivate them. Three of them would not continue because of the reason of low literacy and busy with farm work, and continued university education.

“I was not fluent in reading and writing so I’m not confident to give education to other women. And I was busy with household chores and farm work as I do not have any other people to help me.”(39 years old married VHV) (VL1)

“I could not continue working because I have to attend university in city. But I will work whenever I come back home on holidays.” (17 years old single VHV) (VL3)

4.2.1.3.2. Maternal health education related activities

Women’s group health education session

All VHVs informed women place and time for group education in advance. Moreover, VHV stated that TBA and village leader also helped them for contacting women. Most of the VHV arranged health education sessions in the women’s home, some conducted in VHV’s home, village leader’s home and TBA’s home. Very few of them carried out in monastery, health committee member’s home, education committee member’s home and also at farm. Half of VHVs conducted health education session in the morning before going to their farms, and other half conducted in the evening. One VHV arranged education session in religious days when the women were free. All VHVs mentioned that they used handbook and distributed to

women, explained one topic after another together with pictures and clarified the health messages.

VHV were also asked whether every woman completed three health education sessions or not. Most of the VHV mentioned all women completed three sessions, however, three of them stated that some women couldn't complete in their village because the women migrated to other villages and Thailand.

VHVs were asked the problems faced for conducting health education sessions, mostly stated that they did not have any problems but two of them had problem as their literacy is lower compared to other.

“As I am not fluent in reading and writing both PaO and Myanmar languages, it was difficult to get attention and interest of women some times. I'm not confident enough to continue this work.” (33 years old married VHV) (VL1)

Reporting

All VHV stated that they filled the checked list provided after every health education session. They also stated that the facilitators who were assigned for their village checked the monitoring report every week and the doctors came and checked their activities every month.

Suggestion

VHVs were asked for suggestion to participatory maternal health education program and most of them stated that if they could get more support from village leaders, they could work more proficiently, and women and the other villagers will trust them more.

4.2.2. In-depth Interviews

In-Depth Interviews with the key informants such as three members of health committee, three traditional birth attendants, and one auxiliary midwife were employed to seek to questions regarding their opinion, concern and suggestion on the participatory maternal health education program, pictorial health education handbook and community participation.

4.2.2.1. Participatory maternal health education program

Women's group health education session

All of the key informants stated that VHVs distributed pictorial maternal health education handbook to all women in villages and organized women's group health education session well. VHV arranged health education sessions with the help of village leaders, health committee members and TBAs.

“In previous time, women never talked their health problem to other. I like women's group health education because women had a chance to talk their problems, shared their knowledge and experience. I heard they continued gathering and sharing their knowledge especially in religious days.” (Auxiliary midwife)

Pictorial maternal health education handbook

All of the key informants described the pictorial health education handbook as simple, easy to understand both pictures and health messages. They all stated that content covered all necessary and important information and the handbook was effective because all information was written in both Myanmar and PaO languages which could overcome language barrier in distributing health information.

Satisfaction

All of them were satisfied participatory maternal health education program activities especially handbook and women's group health education session because the program was good for rural women who live far from health facilities and women were empowered, so they could decided which maternal health care practice is right or wrong.

“Most of people in PaO villages are always busy with farm work and household chores, and they never pay attention to health care until they get sick. They also didn’t have chance to read health education booklets and pamphlets, so they have very limited knowledge. Now they were exposed to health education activities and they were empowered. They pay more attention to antenatal care, safe and clean delivery and postnatal care.” (Auxiliary midwife)

“We live in remote area and many people had never been to hospital and health centre. I think this program gave women a lot of knowledge regarding maternal care. We all want health education on new born care, and other illnesses.”

4.2.2.2. Community participation

All informants mentioned that community meetings were held once in month and sometimes, twice in a month. The participants were village leaders, health committee members, education committee members, TBAs, VHVs and villagers. There was absence of participants in the meetings, however, at least one representative attended.

“In first few months, all the village leaders and other members attended community meetings. In later months, they were busy with seasonal crops, so some of them were absence.” (Health committee member) (VL1)

“In my village, we always tried to arrange meeting in the days when they were free and when it was not market day in township. But there were still absence members.” (Health committee member) (VL3)

“Our village is divided into two parts, so every meeting at least one representative for each committee came and shared information to other members who were absence. Only one health committee member from west part never came because she moved to live in her farm and it is very far from village.” (Health committee member) (VL2)

The key informants stated that village leaders and committees members helped the program such as nominating VHVs, arranging place and giving support for VHV training, helped announcing time and place and provided place for women’s group health education, helped collecting check list from VHVs after every session.

The following section describes the assessment of community participation in five key areas which was adopted from Rifkin (Rikin SB, et al, 1988).

4.3. Assessment of community participation

Assessment of community participation was carried out by conducting discussion at the beginning and by the end of participatory maternal health education program. Group discussion was conducted to monitor the community participation in five key areas such as needs assessment, leadership, resource mobilization, management, and organization. The participants in the discussions were village leaders, education committee, village leadership team, auxiliary midwife, health committee, traditional birth attendants, village health volunteers, women of reproductive age. The participants were explained about the aims, procedures and spider gram for measuring the community participation.

4.3.1. Need assessment

At the start of the program, need assessment was measured by conducting group discussion. Need assessment was designed and conducted by the NGO to get information for future plan and implementation. Village leaders, committees and community members were explained about purposes of needs assessment and the result of needs assessment was explained to community members. Thus the needs assessment was ranked as minimal.

At the end of intervention, all the village leaders and committees stated that they were explained about aims and objectives of needs assessment and survey done in their villages. They participated in nominating the facilitators for establishing program activities. The researcher designed the survey and it was conducted by trained facilitators. They did not participate in analysis of survey; however, the result of the pre-intervention survey was explained to the beneficiaries. All the qualitative methods used for needs assessment were facilitated by researcher and explained to the community members. Women in the community, health committee, auxiliary midwife played main role in identifying and analyzing women's health needs and problems. They also helped giving detailed plans specifying responsibilities, resource mobilization in terms of allocation labor and resource needs, implementation timetables and monitoring indicators of the health education program in their social and cultural context. Thus need assessment was ranked as restricted.

4.3.2. Leadership

All the members in leadership team and committees such as health committee, education committee, business loan fund members were elected based on their interest, dedication to community development and commitment in the community. Community meeting was carried out before electing the members. The members were selected from different parts of the village to represents the whole village and work cooperatively and effectively.

At the beginning of the program, the leadership team and committee members made decision together with villagers and NGO for community development activities. Therefore, leadership was ranked as fair.

By the end of participatory maternal health education program, the leadership team and committee members stated that they made decision together with villagers and NGO for all the health promotion activities and improving health knowledge among women in the village. Therefore, leadership was ranked as fair.

4.3.3. Organization

Health committee members helped doctors working in NGO and they always have monthly meeting with the doctor, village committees and village leaders. All of the health activities were initiated and implemented by NGO, yet, the village leaders, all committees and the community members worked closely with doctor. Therefore, organization at the beginning of the program was ranked as restricted.

Most of the participatory maternal health education program activities were initiated and facilitated by health professionals. However, village leadership team and health committee participated in participatory maternal health education program implementation aiming to improve health knowledge of reproductive age women. They were key persons nominating village health volunteers for program and gave support for VHV training. Moreover, they announced place and time for group education, provided place for group education, sometimes they collected monitor books. They participated in monthly meeting facilitated by health professionals for monitoring program activities. Health committee had a main role in participatory maternal health education program implementation and monitoring. Therefore, organization was ranked as fair.

4.3.4. Resource mobilization

The village had business loan fund and income generation program initiated by NGO at the beginning of the participatory maternal health education program. The village leaders, leadership team and committees control of resources. And the usage of the fund for health activities could not be started at the beginning of the participatory maternal health education program. Nevertheless the community contributed manpower to promote well being of the villagers. Therefore, resource mobilization was ranked as restricted at the beginning of the participatory maternal health education program.

The village had business loan fund and income generation program initiated by NGO. The village leaders, leadership team and committees control of resources. The funding from above two programs was distributed to health committee and education committee. Meetings were carried out, and expense and future budget were discussed with the committee members and leadership teams. For participatory maternal health education program, they arranged accommodation for health professionals, arranged places and called for meeting, gave support to VHVs training and support VHVs for conducting health education sessions throughout project. Resource mobilization was ranked as open.

4.3.5. Management

All of the activities related to health care were started by NGO and these were facilitated by doctor working in NGO since the health program introduced to the villages. Community gave support to NGO to achieve the targeted goals; however, it was difficult to call for meeting most of the time. Therefore, management at the start of the participatory maternal health education program was ranked as minimal.

Even though most activities of participatory maternal health education program were initiated and facilitated by health professionals, village leaders and all committees actively involved in implementation and monitoring of participatory maternal health education program. They gave support to facilitator training, village health volunteers training and women's group education sessions. They also organized monthly community meetings with health professionals for monitoring progress and VHV's accomplishment, and future planning. Village health committee

had main role in program implementation and monitoring under supervision of health professionals. Therefore, management was ranked as fair.

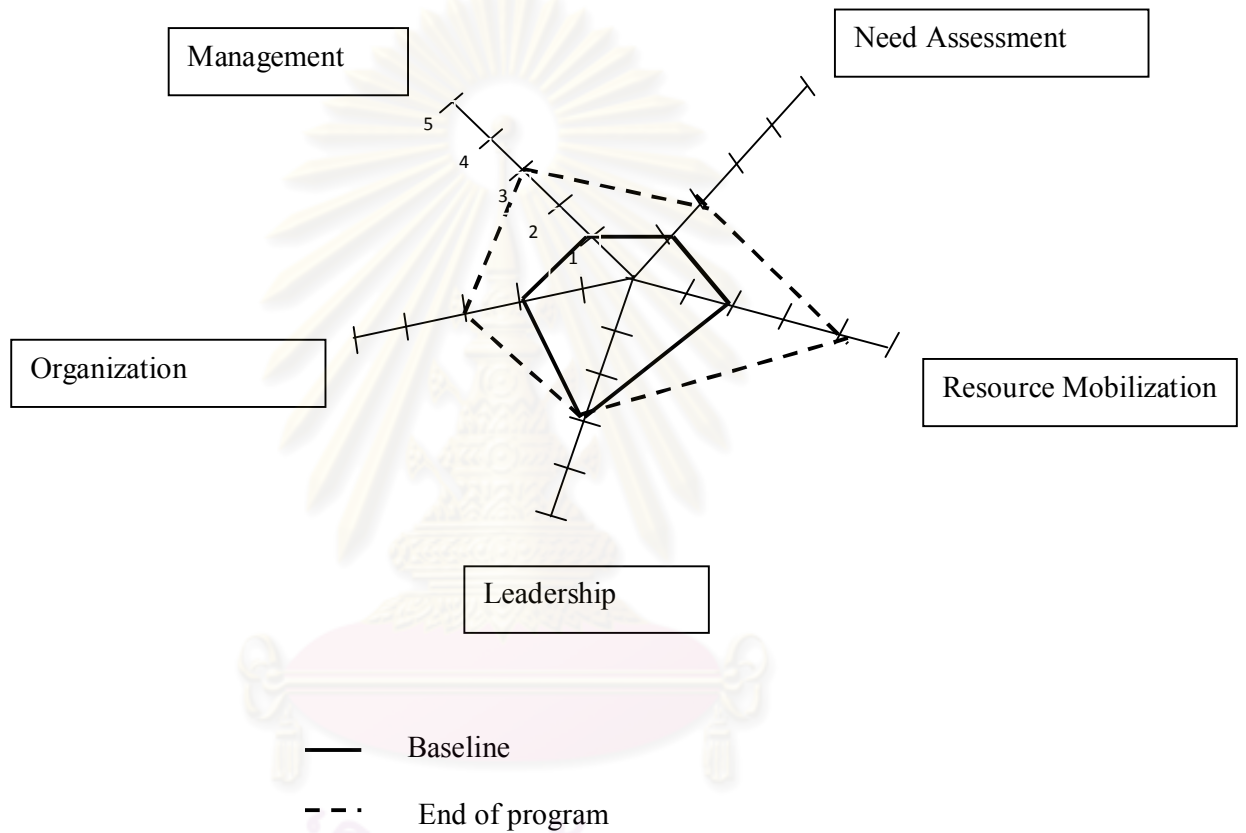


Figure 11: Community participation at baseline and end of the participatory maternal health education program

CHAPTER V

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

The main purpose of this study was to evaluate the effectiveness of participatory maternal health education program using pictorial maternal health education handbook for improving knowledge and attitude and practice/intention to practice regarding maternal health care in antenatal, delivery and postnatal period including breastfeeding and family planning among reproductive age women in PaO ethnic group in Myanmar.

This study was done with the expectation of growing utilization of key reproductive health services and practices for improving maternal health among reproductive age PaO women through participatory approach.

One group pretest post-test design was used and 257 reproductive age women from three PaO villages participated. Intervention program emphasized on giving health education on antenatal, delivery and postnatal care in regards to danger signs, diet, hygiene, antenatal check up and tetanus vaccination, and safe and clean delivery, breastfeeding and family planning conducted by village health volunteers using pictorial handbook which was developed in their social and cultural context.

Various methods such as interview questionnaire, focus group discussion and in-depth interview were used to collect the relevant data.

- (1) Pre-intervention assessment was conducted by using interview questionnaire for collecting information on socioeconomic characteristics, knowledge, attitude and intention to practice of maternal health care in antenatal, delivery and postnatal period including family planning and breastfeeding.
- (2) Process evaluation was done for assessing community participation and maternal health education related activities in study villages.
- (3) Outcome assessment was carried out by conducting the post-intervention interview using same questionnaire as pre-intervention for determining the change in knowledge, attitude and practice/intention to practice of maternal health care in antenatal, delivery and postnatal period including family planning and breastfeeding.

The effectiveness of the participatory maternal health education program was determined by assessing the changes in (a) knowledge and attitude and (b) intention to practice of maternal health care in regards to antenatal, delivery and postnatal care including family planning and breastfeeding 6 months after intervention.

5.1. Discussion of findings

5.1.1. Socioeconomic characteristics of participants

All the respondents in this study were within reproductive age of 15-49 years old. The results showed that majority of them (80.2%) were married and all embraced Buddhism. Literacy was low in the PaO as nearly 70% of the women and their husbands had primary education or lower. The PaO predominantly engage in agriculture and cultivating of tha-na-pet tree, majority of the respondents (85%) were farmers and gardeners, and more than half of them had monthly income less than 15 US \$ or 450 Baht. PaO has their own language, so two-third of the respondents were not fluent in Burmese language which in turns made them difficult to access to health care facilities. Even though the average age at first marriage is relatively late in Myanmar (WHO, 2006), early marriage is very common in PaO as three-fourth of the married women in this study (75.3%) got married before age of 20, and more than one-third of them (39.1%) ever had abortion. The survey done among selected communities in Eastern Myanmar supported the findings of this study as it revealed that the mean age at marriage and first pregnancy was 20.8 years and 11.8% of the women reported being married by the age of 16 years (Mullany LC, et al, 2008). Adolescent fertility and pregnancy is related to early marriage and these findings highlighted the high demand of reproductive health information and services for adolescents in PaO ethnic group.

Regarding to knowledge and attitude towards maternal health care, majority of the women had moderate level of knowledge and attitude. Nearly half of them stated that relatives and friends were the common source of getting reproductive health knowledge including maternal health care and only one-third of the women received health knowledge directly from health professionals. As the villages are far from health facilities, one-third of the respondents have ever seen health education

pamphlets or handbooks while 25.3% of them have ever received health education pamphlets or handbooks and 8.6% ever attended health education training.

5.1.2. Effectiveness of participatory maternal health education program

5.1.2.1. Knowledge and attitude

The quantitative finding revealed that the women exhibited significantly great improvement in overall knowledge and attitude concerning maternal health care in antenatal, delivery and postnatal period including breastfeeding and family planning after the health education sessions. There were statistically significance difference of knowledge and attitude regarding maternal health care of the women between pre and post intervention.

From focus group discussions with reproductive age women, every women stated signs and importance of pregnancy, at least one danger sign in antenatal, delivery and postnatal period, importance of feeding colostrums and they could also state at least two methods of contraception and its pros and cons.

Use of maternal health care services is influenced by attitude and cultural beliefs and also health knowledge is considered as one of the key factors that enable women to be aware of their rights and health status in order to seek appropriate health services. Raising the awareness of women about reproductive health may improve the women's understanding of their own reproductive health and contribute to their acceptance and utilization of available reproductive health services (Zhao Q, 2009).

Previous studies showed that the attendance at health and nutrition education intervention was successful in improving women's nutrition and health care knowledge and influenced their attitude (Liu N, et al, 2009; Liu N et al, 2006) and the awareness of mother also increased if they were informed of risks and complications (Pembe A B, et al, 2009). Moreover, knowledge and attitude towards contraception was improved over time following implementation of health education program found in India (Daniel EE, et al, 2008). However, the study done in Nepal revealed that there was no significant impact of health education intervention on mother's knowledge on breastfeeding (Bolam A, et al, 1998) and similar result on safe motherhood issues found in Tanzania (Mushi D, et al, 2010).

5.1.2.2. Antenatal care

Intention to practice antenatal care in terms of antenatal visit with health professional within first 3 months of pregnancy and having at least three antenatal visits during pregnancy were significantly increased in post intervention with p-value <0.001. Intention to do other health related practices such as anti-tetanus toxoid and dietary behaviors during pregnancy were also significant improved after intervention. Food restriction during pregnancy is one of the common and traditional practices in PaO but intention to do this practice was significantly reduced from 57.7% to 11.7% and similar reduction was found in workload.

Informal interviews with women who delivered the baby showed that 10 out of 11 women had antenatal visits within first 3 months and 3 antenatal visits, had ATT and complied with other health related behaviors. One woman who did not have antenatal care and ATT during pregnancy could be due to being of single mother and could not disclose about her pregnancy as there are strong cultural values against premarital sex.

Previous studies revealed that women in group sessions were less likely to have suboptimal prenatal care (Ickovics JR, et al, 2007) and Yesudian added that empowerment factors such as education and exposure to mass media show positive relationship towards prenatal care utilization (Yesudian PP, 2009). Moreover, community media saturation was expectedly significant predictors of service utilization such as antenatal care, skilled personnel for delivery and postnatal care found in the study conducted in Nigeria (Babalola S and Fatusi A, 2009).

5.1.2.3. Delivery

The findings from this study showed that there was significant increased of intention to have skilled birth attendants such as midwife, auxiliary midwife or trained TBA after intervention with p-value <0.001. Intention to comply other practices related to safe and clean delivery in terms of cleaning the floor for delivery, preparing clean clothes, keeping soap and water ready for TBA was also significantly increased at post intervention.

The result from informal interview showed that 3 women delivered baby at hospital or rural health centre while the other 8 had child birth at their home because

of the distance to health care facilities. WHO recommended that women should give birth in a place she feels is safe; however, it must be a place where all the attention and care are focused on her needs and safety (WHO, 1996). In the study village, 2 women were assisted by auxiliary midwife, 1 woman was assisted by neighbor and the rest of them were assisted by trained TBA. All of the women practiced safe and clean delivery such as cleaning the floor for delivery, preparing clean clothes ready to wrap the newborn and keeping soap and water ready for TBA. But one case was found as single mother and did not prepare clean clothes ready for wrapping baby and she was assisted by neighbor because PaO are conservative and traditional, thus premarital sex and single mother are not accepted in their culture.

Previous studies found that women in group health education sessions felt more ready for labor and delivery (Ickovics JR, et al, 2007) and being advised during antenatal care to deliver a health facility had a huge and statistically significant effect on place of delivery and having skilled birth attendant especially among the poor (Fosto JC, et al, 2008). Similarly, the study done in Tanzania revealed that community based education intervention by safe motherhood promoter showed significant improvement in the utilization of a skilled attendance (Mushi D, et al, 2010).

5.1.2.4. Postnatal care

Seeking postnatal care was not common in the study village as they perceived healthy women do not need health care or assistant after delivery. This research has shown the significant improvement of intention to have postnatal care with health professionals (p-value <0.001) after health education sessions with women. Moreover, other health related behaviors such as dietary behavior, daily workload and personal hygiene in puepeurial period were significantly improved and daily workload was significantly reduced. Obviously, more of the women intended to wash hair and have shower during puepeurial period and this percentage increased from 7% in pre-intervention to 44.7% post intervention.

From informal interview with women who delivered baby, 10 out of 11 women had postnatal checkup with health personnel such as midwife, auxiliary midwife and doctors during 6 weeks postpartum. All of them complied with healthy dietary and hygiene practices in puepeurial period.

The result of this study was compatible with previous studies which supported health and nutrition education intervention enabled the women to take away some of the unhealthy traditional postpartum practices even among lower educated, rural women and decrease the prevalence of postpartum problems (Liu N, et al, 2009) (Liu N, et al, 2006). This was supported by the study done in Nepal as the uptake of postnatal care might be associated with health education and counseling received during antenatal visits and the delivery (Dhkal S, et al, 2007). On the other hand, the study carried out in Turkey found antenatal education program had no significant impact on post natal checkup within first 6 weeks (Turan JM and Say L, 2003).

5.1.2.5. Breastfeeding

The result of this study showed that intention to have early initiation and exclusive breastfeeding was significantly increased among women after intervention with p-value <0.001. . Intention to feed colostrums to newborn was significantly increased from 47.1% to 97.3% after maternal health education sessions. Significantly more women gave up the intention to feed water to the baby within first 4 months after implementing participatory maternal health education program with the percentage decreased from 72.4% in pre-intervention to 20.2% in post intervention. The findings from informal interviews with women who had delivered baby showed that 9 out of the 11 women initiated breastfeeding within 1 hour after delivery, and all of them fed colostrums to newborn.

Previous studies found that antenatal education program had significant related to early initiation of breastfeeding within 2 hours after birth (Turan JM and Say L, 2003; Chapman DJ, et al, 2004), and Baker added that early initiation of breastfeeding and exclusive breastfeeding for the first month of life was increased after large-scale community based program conducted in Bolivia and Madagascar (Baker AJ, et al, 2006). Conversely, the peer counseling and health education intervention had no significant effect on early initiation of breastfeeding (Bolam A, et al, 1998; Turan JM and Say L, 2003) and exclusive breastfeeding (Turan JM and Say L, 2003; Chapman DJ, et al, 2004) as the impact of the intervention was not sustained (McInnes RJ et al, 2000).

5.1.2.6. Family planning

This study found there was no statistically significant difference of contraceptive used among married women, but the percentage of using contraception was increased from 70.4% to 75.7%. The prevalence of contraceptive used in the study villages were higher compared to national contraceptive prevalence rate which was 37%. This could be explained as the study villages have already had mobile clinic run by NGO since 2009 and some methods of contraception such as oral pills and 3 month injection are provided in cost sharing system. However, among women who were not currently married, intention to use any contraceptive method was significantly increased after intervention.

The result revealed that the contraceptive method used by married women was difference between before and after intervention. IUD was commonly used before intervention because there is a quack providing IUD in PaO villages. In post intervention, usage of IUD was decreased and the 3 month injection was more commonly used. This may be due to lack of information, communication and education activities related to family planning before participatory maternal health education program which in turns made them little knowledge and misconception of usage of family planning and its different methods.

The findings from the study conducted in India showed that culturally appropriate community based communication program lead to increased contraceptive use (Daniel EE, et al, 2008). This was contrary to other studies finding as showing community based intervention for contraception promotion slightly enhanced or had no significant impact on use of contraceptive methods (Bolan A, et al, 1998; Qian X, et al, 2007; Kitzman HR, et al, 2000; Turan JM and Say L, 2003)

5.1.2.7. Pictorial maternal health education handbook

Pictorial maternal health education handbook was developed based on the discussion with reproductive age PaO women in one of the study village. Informal interviews with traditional birth attendants and auxiliary midwife were done for acquiring additional information.

In the handbook, pictures were closely linked to written text and developed culturally and locally appropriate. All of the health messages were written in PaO and Myanmar language as well. The reason of this could be explained by highlighting the language barrier in the result of the study which revealed two-third of the women was not fluent in Burmese language as 45.9% could not communicate at all and 26.5% could only speak Burmese language. About education level, half of the women attended primary education but they stated that it was difficult to read Burmese language.

The result of qualitative analysis revealed that the pictorial maternal health education handbook was simple and easy to understand the pictures and health messages. Importantly, it was in bilingual so it was thought to overcome the language barrier which was common in most of the ethnic groups in Myanmar.

From quantitative analysis, it was found that knowledge, attitude and intention to practice of maternal health care and health related behaviors were significantly increased after women's group education sessions using pictorial maternal health education handbook. Additional to this, the practices of maternal health care including breastfeeding, nutrition and personal hygiene were improved obviously among women who had child birth.

Houts and colleges explicated that the effectiveness of health communications can be significantly increased by including pictures in the design of new health education materials and markedly increased attention to and recall of health education information. Spoken information with the help of pictures will benefit all, but people with low literacy skills are especially likely to benefit (Houts P S, et al, 2006). A previous study done in Jamaica showed that the pictorial card for raising awareness of eclampsia was widely acceptable. The pictorial card increased the antenatal mother's own awareness of the prodromal symptoms of eclampsia and empowered them to

seek appropriate care when the particular symptoms occurred (MacGillivray I, et al, 2004).

5.1.2.8. Community participation

Finding from this study indicated that the participatory approach used in intervention empowered the community leaders, health committee, traditional birth attendance and women. Their abilities to identify and analyze women's problems in terms of causes, consequences and solutions, and analyze the existing situation (constraints as well as resources available) were increased. Resource mobilization and allocations according to the existing resources, developing action plans to address the priority problems and having responsibilities in implementation of action plans were also improved.

The principle of health education in this study focused on the group discussion technique using pictorial maternal health education handbook. This helped the women to learn from another's experience, to increase their awareness, competence and confidence, get to know each other and develop cohesion among them.

As a result, knowledge, attitude and intention to practice of maternal health care concerning antenatal, delivery and postnatal period including breastfeeding and family planning of reproductive age women were significantly improved. In addition to this, communities were knowledgeable and raising awareness on maternal health and qualitative result revealed the high satisfaction to the program.

The spider-gram (pentagram) framework developed by Rifkin (Rikin SB, et al, 1988) was used in this study assessing and highlighting community participation in needs assessment, leadership, resource mobilization, management, and organization. The findings showed that four key areas such as need assessment, resource mobilization, organization and management were improved but leadership remained the same at the end of the program.

The participatory maternal health education program was initiated by health professionals from NGO. The communities were in support of the program since they knew it was for their own benefit. The beneficiary community involvement at the preparation phase was not much. Though the community involvement at the activity plan and implementation phase was encouraging, their involvement in monitoring and

evaluation of the program was quite satisfactory. All the implementation and monitoring and evaluation phases were driven by health professionals.

The framework and concept of the spider-gram (pentagram) itself intended to show the changes and the process of participation in specific health programs. Although some changes of community participation in participatory maternal health education program were described, these could not be concluded as good or bad participation nor correlated to improved women's knowledge, attitude and intention to practice regarding maternal health care. However, there was increased in breadth of the participation along the continuum which showed the increasing community involvement in the participatory maternal health education program.

There were some shortcomings in utilizing of the framework. Firstly, the degree of participation produced from the group discussions with representatives was subjective. Secondly, the result was based on the discussion with village leaders, health committee, traditional birth attendants, village health volunteers and some women; the result was view of the representatives of community and not the villagers' perspective.

Community participation is the key to the success of virtually every community-based development project. A community participation in family planning study was carried out in Thailand and it was revealed that knowledge about the family planning program was increased and services were greatly accessed as benefits of community participation. Community participation was visible and increasing in the family planning activities even that have no overt and immediate economic benefits. Participation of community was valued as an important strategy for helping to manage and implement family planning service (Yoddumnern-Attig B, et al, 1993). Similarly, emphasis on community involvement was the main reason of getting achievement in increasing utilization of skilled birth attendants in community based safe motherhood promoter intervention in Tanzania. This improvement is attributed to the safe motherhood promoters' commitment and the close collaboration with existing community structures as well as health services (Mushi D, et al, 2010).

5.2. Conclusion

This study was carried out in three PaO villages which are located in Taunggyi Township, Shan State, Myanmar. The main purpose of this study was to evaluate the effectiveness of participatory maternal health education program using pictorial maternal health education handbook for improving knowledge and attitude and practice/intention to practice regarding maternal health care in antenatal, delivery and postnatal period including breastfeeding and family planning among reproductive age women in PaO ethnic group in Myanmar.

Intervention program emphasized on giving health education on antenatal, delivery and postnatal care in regards to danger signs, diet, hygiene, antenatal and postnatal check up and tetanus vaccination, and safe and clean delivery, breastfeeding and family planning conducted by village health volunteers using pictorial handbook which was developed in their social and cultural context. Participatory approach was used to develop the participatory maternal health education program and both quantitative and qualitative methods were used to evaluate the effectiveness of participatory maternal health education program.

All the respondents in this study were within reproductive age of 15-49 years old and 80.2% of them were married. Early marriage is very common in PaO as three-fourth of the married women in this study (75.3%) got married before age of 20. All of the women embraced Buddhism. Literacy was low in the PaO as nearly 70% of the women and their husbands had primary education or lower. Majority of the respondents (85%) were farmers and gardeners and more than half of them had monthly income less than 15 US \$ or 450 Baht. As PaO has their own language, two-third of the respondents were not fluent in Burmese language

Regarding to knowledge and attitude towards maternal health care, majority of the women had low knowledge and attitude. Moreover, as the villages are far from health facilities, one-third of the respondents have ever seen health education pamphlets or handbooks while 25.3% of them have ever received health education pamphlets or handbooks and 8.6% ever attended health education training.

In this study, pictorial maternal health education handbook was developed based on the discussion with reproductive age PaO women, traditional birth attendants, auxiliary midwife and health committee members. In the handbook,

pictures were closely linked to written text and developed culturally and locally appropriate. All of the health messages were written in PaO and Myanmar language to overcome the language barrier.

The findings revealed that knowledge, attitude and intention to practice of maternal health care and health related behaviors were significantly increased after women's group education sessions using pictorial maternal health education handbook. Additional to this, the practices of maternal health care including breastfeeding, nutrition and personal hygiene were improved obviously among women who had child birth.

The spider-gram (pentagram) framework was also used to demonstrate the extent of community participation and the findings showed that four key areas such as need assessment, resource mobilization, organization and management were improved but leadership remained the same at the end of the program. Even though some changes of community participation in participatory maternal health education program were described, these could not be concluded as good or bad participation nor correlated to improved women's knowledge, attitude and practice regarding maternal health care.

In conclusion, the community based maternal health education intervention using pictorial handbook and group education had positive impact on women's knowledge, attitude and intention to practice of maternal health care in antenatal, delivery and postnatal period including breastfeeding and family planning. And participatory approach used for developing participatory maternal health education program empowered the community representatives in identifying and analyzing the women's health problem, and developing action plans to address the priority problems, resource mobilization, having responsibilities in implementing, and evaluation of the health program.

5.3. Scope and Limitations of the study

1. Because of time limitation, duration of study was one year, therefore the number of pregnancies and deliveries in the study villages were not large enough to evaluate the changes in practice of maternal health care statistically.
2. There was difficulty in transportation to travel to remote hard to reach study area and find appropriate control villages; one group pre-test post-test design was used. Therefore, maturation effect could not be eliminated and the practice changes over time could not be measured.
3. There was no parallel health education program during one year time. Moreover, there is no electricity in the study villages during project time, so they could not access to mass media. The changes in intention to practice or practice (with small number of women) could be due to participatory maternal health education program.
4. 44 women were lost after pre-intervention assessment and they did not participate in the participatory maternal health education program. There was significance difference of age, marital status but not education and income. This can be explained that most of the lost women migrated to Thailand, thus they are single and in working age.

5.4. Recommendations

- Program sustainability is one of the top concerns in development efforts. Capacity building to village leadership teams including village leaders and village development committees through book keeping, organizational training, records keeping, minutes writing and other capacity building training should be done.
- Refreshment training of village health volunteers should be carried out from time to time for retaining of VHVs and empowering them to work efficiently.
- This study can be replicated and implied in other PaO villages for promoting knowledge, attitude and practices regarding maternal health including family planning.
- To enable community commitment and contribute resources willingly towards participatory maternal health education program, the study recommends that community leaders and committees should be transparent and accountable.

5.5. Lessons learnt

Regarding community participation,

- For successful program, grassroots support was needed at the level of community and community organizations and local partnership from NGO or local government. Implementation of the project should be participatory to achieve targeted goals.

Regarding village health volunteers,

- Village health volunteers need to be selectively recruited, adequately trained, supervised and supported.
- Incentives and motivation to VHVs is also important strategy to be successful of project.

Regarding women,

- PaO women prefer to receive health information from peers rather than outside experts and they also prefer to read health education materials in their language rather than national language. Depends on their literacy, they have a preference of pictorial book rather than words information.

5.6. Future research suggestion

- This research should be carried out in larger population and for longer period to get the sufficient number of pregnancies and deliveries to determine the changes in practice of maternal health care.
- This study focused on many aspects of maternal health care, so future research should be emphasized on specific area of maternal health care to give more detail picture of effect of intervention.
- Pre-test post-test design with control group should be used to eliminate the maturation threats and testing threats.



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Appendices

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Appendix A: Pre and post intervention questionnaire

Topic: A Participatory Action Research on improving Maternal Health through health education program with pictorial education handbook in PaO minority group, Myanmar

With whom: Reproductive age women

□□□ Identity No:

Interviewer: -----

Instruction: Please fill color with pencil as appropriate.

Part I: Socio-demographic characteristics

1. How old are you now?

----- Years.

2. Marital status

1. married

4. widowed

2. divorced

5. others (specify)-----

--

3. single

3. At which age did you get married?

----- Years

4. What is your religion?

1. Buddhist

3. Christian

2. Muslim

4. Others (specify) -----

5. What is your education?

1. never go to school

2. primary education (1-4 years of school)

3. secondary education (5-8 years of school)

4. high school level (9-10 years of school)

5. higher education (university)

6. What is your husband's education?

1. never go to school
2. primary education (1-4 years of school)
3. secondary education (5-8 years of school)
4. high school level (9-10 years of school)
5. higher education (university)

7. What is your occupation?

1. housewife
2. farmer
3. grow sebesten leaves
4. others (please specify) -----

8. Family income per month (Total family income per month)

----- Kyats/per month

9. What is your Burmese language skill?

1. Cannot communicate at all
2. Can speak Burmese language fluently but cannot read and write
3. Fluently in Burmese language (speaking, reading and writing)

Past Reproductive History

10. Have you ever been pregnant before?

1. Yes (Go to Q 11)
2. No (Go to Q 15)

11. How many times have you got pregnant until now?

----- times

12. Have you ever had an abortion?

1. Yes, ----- times
2. No

13. Have you ever had your children died?

1. Yes, ----- children
2. No

14. How many of your children are still alive now?

----- children.

Part II: Knowledge of Antenatal care, Delivery, Postnatal care, breastfeeding and family planning

15. Please answer the following statement.

No	Statement	Yes	No	Don't know
1	First examination should be done within first 3 months.			
2	Pregnant woman should stay at home if she suffers severe headache.			
3	It is needed to have tetanus vaccination during pregnancy.			
4	Pregnant women should check up at least 3 times with health personnel eg. midwife, doctor.			
5	Supplementary vitamins are not needed to take after delivery.			
6	Morning sickness is a danger sign in pregnant women.			
7	Quickening is the sign of variability of fetus.			
8	Severe abdominal pain is a danger sign in pregnant mother.			
9	Excessive bleeding during delivery can harm both mother and fetus life.			
10	Women should go to see the health personnel when she suffers foul smelling discharge per vagina during puerperial period.			
11	Colostrums should not feed to the infant.			
12	Feeding colostrums can promote easy delivery of placenta.			
13	Feeding colostrums can promote expulsion of breast milk.			
14	Breastfeeding can enhance maternal-infant contact.			
15	Newborn gets resistance from breast milk (colostrums) and resists disease.			
16	Women can have children again by stopping to take pill or injection.			
17	Oral pill can cause headache and nausea.			
18	Women who take oral pill should take a pill everyday to avoid becoming pregnant.			
19	Depo injection should be taken once in 3 months to prevent pregnancy.			

16. Where do you get these knowledge?

(Can have more than one answer)

1. from parents
2. from relatives and friends
3. from books and magazines
4. from television and radio
5. from school
6. the health education materials taken from hospitals
7. directly from medical workers
8. from maternal health education handbook
9. others -----

17. Have you ever seen the health education pamphlets or handbooks?

1. Yes
2. Never

18. Have you received pamphlets and handbooks?

1. Yes
2. Never

19. Have you ever attended a women's health education for maternal health care?

1. Yes ----- times
2. Never

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Part III: Attitude of Antenatal care, Delivery, Postnatal care, breastfeeding and family planning

20. Could you please answer the following statements?

No	Statement	Agree	Disagree	Uncertain
1	I consider antenatal care is needed only for sick pregnant woman.			
2	I think women should not have bath 7 days after delivery.			
3	In my opinion, sexual activity should not be initiated until 6 weeks after giving birth.			
4	I consider postnatal check up should be done only when the mother feels sick.			
5	I think women should not breastfeed in public places.			
6	I think father feel left out if a mother breast-feeds.			
7	In my thought, breastfeeding should be stopped if the mother is sick because it can pass infection to the baby.			
8	I believe that breastfeeding is easy and economical.			
9	I suppose discussion on using contraceptive is not ashamed among couples.			
10	I believe that women should stop using Depo injection if she has no menstrual bleeding for a long time.			
11	I believe that family planning can improve mother's life.			
12	I think that women should not eat much as it can enhance big baby and make difficult delivery.			
13	I suppose women should have a rest at least 45 days after delivery a baby.			

Part IV: Practice of antenatal care, delivery, postnatal care, breastfeeding and family planning

For pregnant mother – Part A

For mother of under 5 children, married women and single women – Part B

Part A: For Pregnant Mother

21. Do you take antenatal visit with midwife/auxiliary midwife/doctor within the first 3 months of pregnancy?

1. Yes

2. No

3. Undecided

22. Do you take injection to the arm during pregnancy to prevent getting tetanus infection?

1. Yes
2. No
3. Undecided

23. Do you do hard work during pregnancy?

1. Yes
2. No
3. Undecided

24. Do you do food restriction during pregnancy?

1. Yes
2. No
3. Undecided

25. Do you have antenatal visits at least 3 times during pregnancy?

1. Yes
2. No
3. Undecided

26. With whom would you plan to deliver the baby?

1. Skilled birth attendant (midwife, auxiliary midwife, doctor, nurse)
2. Traditional birth attendants
3. Relatives
4. Other -----
5. Undecided

27. Would you clean the floor for delivery?

1. Yes
2. No
3. Undecided

28. Would you prepare clean clothes ready to wrap the newborn?

1. Yes
2. No
3. Undecided

29. Would you keep soap and water ready for washing the hands of TBAs?

1. Yes
2. No
3. Undecided

30. Do you intend to take postnatal check up with midwife/auxiliary midwife after you deliver a baby?

1. Yes
2. No
3. Undecided

31. Would you do hard work during puerperial period?

1. Yes
2. No
3. Undecided

32. Would you consume nutritious food and not reduce food intake during puerperial period?

1. Yes
2. No
3. Undecided

33. Would you have bath and wash hair for personal hygiene during puerperial period?

1. Yes
2. No
3. Undecided

34. When would you start breastfeeding your baby?

1. Within 1hr of child birth
2. Within one day of child birth
3. After one day of child birth

4. No breast feeding

5. Undecided

35. Would you feed your baby with the yellow sticky fluid of the breast secreted prior to breast milk?

1. Yes

2. No

3. Undecided

36. Would you feed your baby with water during 4 months after delivery?

1. Yes

2. No

3. Undecided

37. How long do you plan to breast feed your baby only with breast milk?

1. Up to 4 months

2. Not breast milk alone

3. Undecided

38. How long would you plan to breastfeed your baby?

1. Up to 6 months

2. Up to 1 year

3. Up to 2 year

4. Undecided

39. Would you intend to use contraception?

1. Yes

2. No

40. Which method are you or your partner going to use?

(Answer only one method)

1. Injectables

2. Oral pill

3. Male condoms

4. IUD

5. Female sterilization

6. Male sterilization

7. Natural method

41. How long are you going to use contraception?

----- days/ weeks/ months/ years

“Thank you for your answer”

Part B: For mother of under 5 children, married women and single women

21. When you get pregnant, would you take antenatal visit with midwife/auxiliary midwife/doctor within the first 3 months of pregnancy?

1. Yes

2. No

3. Undecided

22. When you get pregnant, would you take injection to the arm during pregnancy to prevent getting tetanus infection?

1. Yes

2. No

3. Undecided

23. When you get pregnant, would you do hard work during pregnancy?

1. Yes

2. No

3. Undecided

24. When you get pregnant, would you do food restriction during pregnancy?

1. Yes

2. No

3. Undecided

25. When you get pregnant, would you have antenatal visits at least 3 times during pregnancy?

1. Yes

2. No

3. Undecided

26. With whom would you plan to deliver the baby?

1. Skilled birth attendant (midwife, auxiliary midwife, doctor, nurse)

2. Traditional birth attendants

3. Relatives

4. Other -----

5. Undecided

27. Would you clean the floor for delivery?

1. Yes

2. No

3. Undecided

28. Would you prepare clean clothes ready to wrap the newborn?

1. Yes

2. No

3. Undecided

29. Would you keep soap and water ready for washing the hands of TBAs?

1. Yes

2. No

3. Undecided

30. Do you intend to take postnatal check up with midwife/auxiliary midwife after you deliver a baby?

1. Yes

2. No

3. Undecided

31. Would you do hard work during puerperial period?

1. Yes

2. No

3. Undecided

32. Would you consume nutritious food and not reduce food intake during pueprial period?

1. Yes
2. No
3. Undecided

33. Would you have bath and wash hair for personal hygiene during pueprial period?

1. Yes
2. No
3. Undecided

34. When would you start breastfeeding your baby?

1. Within 1hr of child birth
2. Within one day of child birth
3. After one day of child birth
4. No breast feeding
5. Undecided

35. Would you feed your baby with the yellow sticky fluid of the breast secreted prior to breast milk?

1. Yes
2. No
3. Undecided

36. Would you feed your baby with water during 4 months after delivery?

1. Yes
2. No
3. Undecided

37. How long do you plan to breast feed your baby only with breast milk?

1. Up to 4 months
2. Not breast milk alone
3. Undecided

38. How long would you plan to breastfeed your baby?

1. Up to 6 months
2. Up to 1 year
2. Up to 2 year
3. Undecided

For married women,

39. Are you or your partner using contraception now?

1. Yes
2. No

40. Which method are you or your partner using now?

(Answer only one method)

1. Injectables
2. Oral pill
3. Male condoms
4. IUD
5. Female sterilization
6. Male sterilization
7. Natural method

41. How long have you been using current contraceptive method?

----- days/ weeks/ months/ years

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For single/divorced/widowed women,

39. Would you intend to use contraception when you get married?

1. Yes
2. No
3. Undecided

40. Which method are you or your partner going to use?

(Answer only one method)

1. Injectables
2. Oral pill
3. Male condoms
4. IUD
5. Female sterilization
6. Male sterilization
7. Natural method

41. How long are you going to use contraception?

----- days/ weeks/ months/ years

“Thank you for your answer”

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Appendix B: Focus Group Discussion Guideline for Pictorial Maternal Health Education Handbook development

With whom: Reproductive age women

The researcher conducted the FGD by following the procedures as follows:

Greetings the participants, explaining the purposes of the research, and asking for cooperation to participate in the study.

Introducing herself and creating rapport.

Letting the participants causally introduce themselves.

I. Pregnancy and Antenatal care

A. Knowledge of pregnancy

1. How do women in this community know they are pregnant?
2. How do you know that you are pregnant? (for mother and pregnant women)

B. Behavior and customs during pregnancy

1. What woman should do and should not do during pregnancy? (food restriction, hard work, any other taboos, etc)

C. Knowledge of pregnancy complications

1. What are the danger signs during pregnancy? Why do you think that are dangerous?

D. Antenatal care

1. Do the women in this community usually seek for antenatal care?
2. Who decides whether a woman receive prenatal care or not? Why those people decide?
3. To whom the pregnant women go for antenatal visit (midwife, TBA, relatives, etc)? Why do pregnant women prefer these people? What these people do and say during antenatal visit?

II. Delivery and Postpartum

A. Practices during delivery

1. What do women in your community to prepare for childbirth?
2. Are there any special herbs, substances, or practices that help with childbirth?

3. Where do most women in your community give birth? Why the women prefer these places?
 4. Who does usually assist delivery? What do they provide during delivery? Why women prefer these people?
- B. Knowledge of complications during child birth and postpartum
1. Do you know of anyone who has had problems during childbirth and postpartum?
 2. What are the danger signs during delivery and postpartum? Why do you think that are dangerous?
- C. Behavioral and customs after childbirth
1. What woman should do and should not do during postpartum? (food restriction, hard work, any other taboos, etc)

III. Breastfeeding

1. When do mothers initiate breastfeeding?
2. What are the beliefs about colostrums?
3. When breast milk is considered insufficient? Why?
4. What do mother do if they perceive their milk is not enough for the baby?
5. When the breast milk is considered harmful or a cause of illness?
6. How does the breastfeeding practice change when the mother is sick? Why? Does this depend on the type of illness and the perceived cause?

IV. Birth Spacing

1. Do women have idea for birth spacing?
2. If a woman wants to delay or avoid having children, what can she do to prevent getting pregnant? Where do they go for birth spacing? What do they get and why the women prefer these places?
3. What are the methods of birth spacing?
4. Are these birth spacing methods accepted by the society?
5. Who decides which method(s) of child spacing to use? Why these people decide?
6. In a relationship between a man and a woman, who decides whether or not to use child spacing?
7. What are some reasons why women do not use child spacing?

V. Importance of the maternal health care

1. Do you think problems during pregnancy, delivery and postpartum are important to women? Why or why not?
2. What suggestions does mother/family have about how to overcome problems in getting care for complications?
3. Who in the community help you in getting care during pregnancy, delivery and postpartum?

VI. Methods used

1. Pregnancy calendar
2. Daily activities

Pretesting the Pictorial Maternal Health Education Handbook***With whom: reproductive age women, AMWs and TBAs***

1. What do you think is the message or idea in this handbook?
2. What do you think this handbook is planned for women of reproductive age?
3. What would your friends think if they saw this handbook?
4. Do you think the handbook could look nicer?
5. Do you think other colors should be used?
6. Are the pictures, drawings and words big enough? Are they too big or too small?
7. In what ways do you think the handbook could be improved?
8. Are the ideas and suggestions in the handbook practical and useful?

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Appendix C: Focus Group Discussion Guideline for evaluation of participatory maternal health education program

With whom: Women of reproductive age

The researcher conducted the FGD by following the procedures as follows:

Greetings the participants, explaining the purposes of the research, and asking for cooperation to participate in the study.

Introducing herself and creating rapport.

Letting the participants causally introduce themselves.

1. What do you think about the pictorial maternal health education handbook?

Probe: What is the information in the book? Could you recognize and tell?

Is it simple and easy to understand?

Are you satisfied with the handbook or not? Why?

2. What do you think about the women's group education?

Probe: Did you inform the place and time in advance?

How do the VHVs provide information? Do you understand?

Did the VHVs maintain the group discussion lively and let everybody participate?

Did the VHV effectively convey the important information? Do you get the information you want?

Are you satisfied or not? Why?

3. Awareness about maternal health.

- What is the importance of prenatal care?
- What are the normal signs and symptoms during pregnancy?
- What are the danger signs during pregnancy, delivery and postpartum?
- What is the importance of postnatal check-ups?
- Why should a woman breastfeed her baby?
- Should women feed colostrums to the newborn? Are the colostrums important for the newborn? Why or why not?
- If a woman wants to delay or avoid having children, what can she do to prevent getting pregnant?
- What are some of the advantages of child spacing? What are some of the disadvantages of child spacing?

4. Others

- What kind of problem do you have when attend home visiting and group education? (Probe: husband/in-laws agreed or not, distance, transportation, time)
- How did you solve the problem?

Closing

1. Any other suggestion or information would you like to share?
2. Thank you for giving your time and information to me.



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Appendix D: In-depth interview Guideline

With whom: Traditional birth attendant (TBA), Auxiliary midwife (AMW), Health committee member

The researcher conducted the in-depth interview by following the procedures as follows:

Greetings the participant, explaining the purposes of the research, and asking for cooperation to participate in the study.

Introducing herself and creating rapport.

Letting the participants causally introduce themselves.

1. What do you think about the pictorial maternal health education handbook?

Probe: Is it simple and easy to understand?

Does the book cover all the important information? What is missing information in the book?

Are you satisfied with the handbook or not? Why?

2. What do you think about the women's group education?

Probe: How did VHV organize the group education? (seating, using learning materials, lively discussion and full participation, etc)

Did VHVs provide important information?

What topics were covered? Did the VHV effectively convey the important information? Are you satisfied or not? Why?

3. What do you think about the community participation?

Probe: How frequent are meetings?

Does everybody in participatory maternal health education program committee attend the meeting most of the time? Any member doesn't attend? What are the reasons they don't attend the meeting?

What problems or obstacles occurred (for conducting or during the meeting)? How is it solved?

What community resources or support system exist to implement the health education program? How best these resources and support system mobilized?

Any other suggestion or opinion would you like to share?

Appendix E: Focus Group Discussion Guideline

With whom: Village health volunteers

The researcher conducted the FGD by following the procedures as follows:

Greetings the participants, explaining the purposes of the research, and asking for cooperation to participate in the study.

Introducing herself and creating rapport.

Letting the participants causally introduce themselves and to tell the village about she was working.

1. Please tell about the volunteer work.

Probe: How did you decide to be village health volunteer?

What would motivate you to continue working as a volunteer?

How do you like volunteer job?

How long do you think you would continue working as a village health volunteer?

2. Maternal health education related activities

Please tell me about the maternal health related education you provide to the community

Probe: How did you contact women?

How did you give face to face home visit to the women?

How did you arrange for women's group education session?

What did you tell them about maternal health during antenatal, delivery, postnatal period including breastfeeding and family planning?

How did you teach them?

How did you clarify their concern?

Does every woman complete three sessions? Is there anyone who does not finish three sessions? What reasons do you think they don't finish all the sessions?

What problems did you face in educating women?

3. Reporting

Please tell me about the reporting of your work.

Probe: Do you fill monitor sheet after home visit and group session?

Whom do you report your activities?

How frequently do you report your activities?

4. Satisfaction

I would like to know about your satisfaction with your volunteer job.

Probe: What constraints do you face in your job?

How satisfied are you with your job and why?

5. Others

What kind of problem do you come across with?

How do you solve them?

Do you notice any danger signs during your volunteer job? Please share about your experience?

Closing

1. Any other suggestion or information would you like to share?
2. Thank you for giving your time and information to me.



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Appendix F: Summary of Participatory maternal health education program

Phase I	Preparation Phase
1.1	Active contact with the community leaders, village leadership teams, health committee and other key persons
1.2	Update of population data of reproductive age women
1.3	Training of facilitators
Phase II	Baseline data collection
2.1	Training of the interviewer
2.2	Pre-intervention survey by using structured questionnaire
Phase III	Activity Plan and Implementation
Stage 3.1	Establish participatory maternal health education program's committee
Stage 3.2	Establish participatory maternal health education program Step 1: Problem identification and diagnosis Step 2: Problem analysis Step 3: Mobilize support of the community Step 4: Planning for monitoring and evaluation
Stage 3.3	Development of pictorial maternal health education handbook Training of village health volunteers (VHVs)
Stage 3.4	Implementation of participatory maternal health education program (1) Women's group health education
Phase IV	Monitoring and Evaluation
4.1	Monitoring the community participation - Visual methods (spider gram)
4.2	Monitoring and process evaluation of participatory maternal health education program Step 1: Monitor sheet filled by VHVs Step 2: Small group feedback discussion with women Step 3: Observation Step 4: FGD with VHVs Step 5: Feedback meeting Step 6: In-depth interview with health committee members, TBAs and AMW
4.3	Outcome evaluation - Post intervention survey by using structured questionnaire
Phase V	Analysis and reporting of findings

Appendix G

Ranking scale for measuring community participation in five process dimensions

	Minimal 1	Restricted 2	Fair 3	Open 4	Maximal 5
Leadership	Community- based leadership represents only the wealthy minority and acts only in their interest	No collaboration among community- based leadership for community health; A health leader! Worker appointed by outside expert works independent of social interest groups	There is some collaborating community-based leadership functioning under an outside expert - appointed health leader/worker	Community-based leadership represents different groups in the community, is active and takes initiative in community health activities	Community-based leadership represents the variety of interests in the community and has ownership/control of community health activities
Organization	Outside expert does not use a community-based organization, or imposes one for project, which then remains inactive	Outside expert imposes a community-based organization or committee, but this organization develops some activities	Outside expert imposes a community-based organization, but this organization becomes fully active	Existing community organizations actively cooperate in community health activities	Existing community organizations, representing a broad constituency, incorporate or create their own mechanisms for introducing community health activities.
Needs assessment	Outside expert solely projects possible problems or conducts survey	Outside expert viewpoint dominates but community interests are considered, often through input of community-based leadership	Community-based leadership assessment of community views and needs dominates	Community-based leadership is actively involved in seeking out community members' viewpoint, and in analysis of needs	Community members involved in research and analysis of needs under active community-based leadership direction

Management	Activities induced by outside expert. Only outside expert conducts supervision of activities	An outside expert – appointed health leader/worker manages independently, under supervision of outside expert	Community-based leadership involved to some extent in management of activities but without control of activities	Community-based leadership is self-managed and involved in supervisor of activities	The activities and supervision of the activities are the responsibility of the community-based leadership
Resource mobilization	Token amount contributed by community. Community-based leadership does not decide on any resources allocation	Mechanism established for resource generation, but community-based leadership has no control over use of resources	Continuing contribution of local resources, but no or limited community-based leadership control of resources	Continuing contribution of local resources, and community-based leadership controls use of funds	Considerable resources contributed by community or obtained otherwise by community-based leadership. Community-based leadership allocates available resources

Needs assessment will be assessed by the following questions.

1. How were maternal health problems in the community identified?
2. What role was foreseen for villagers in conducting needs assessment?
3. Who designed the surveys and who conducted them?
4. Were the surveys used to get the information or to initiate the discussions with various possible beneficiaries?
5. Were potential beneficiaries involved in analyzing the results?
6. If community people involved in the assessment, did they continue to be involved in the implementation?
7. Was it able to include various representatives from the community such as village leader, health committee, traditional birth attendants, auxiliary midwife, and women of reproductive age?

Leadership will be assessed by the following questions.

1. Which group does the leadership represent and how does it represent these groups?
2. How was the leadership chosen?
3. Is the leadership paternalistic and/or dictatorial limiting the prospect for wider participation by various groups in the community?
4. Have most of decisions made by the leadership resulted in improvements of the majority of reproductive age women, for only the elites, for the poor?

Organization will be assessed by the following questions.

1. How were village health committee and village leadership team focusing on improved health knowledge of the reproductive age women regarding maternal health care?
2. What is the relationship of NGO and health professionals to village health committee and village leadership team-do they have a decision making role?
3. How does the participatory maternal health education programcommittee get resources?
4. Who staffs the village health committee, village leadership team and participatory maternal health education programcommittee (elites or the poor)?

Resource mobilization is a symbol of commitment to a program and it will be assessed by the following questions.

1. What have beneficiaries contributed?
2. Who has decided how resources should be used?
3. Do all groups that contribute have a decision-making role?
4. Which group influence mobilization and how do they do it?
5. How are resources mobilized from the community?

Management will be assessed by the following questions.

1. What is the line of responsibility for management?
2. What are the roles of village health volunteers?
3. Are the village health volunteers responsible to community organization or researcher?
4. Has the decision making structure changed both from the beginning and from the baseline to favor certain groups and which groups are favored?
5. Have the management expended to broaden the decision-making groups?

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Appendix J
Administrative Cost

Item	Description	Breakdown	Total (US \$)
<i>Facilitator Training (7 days)</i>			
- Incentives	5 facilitators	1 \$/person × 5 days	25
- Accommodation		30 \$ (for 5 days)	30
- Food		5 \$/person × 5 days	125
- Transport		30 \$	30
Trainer	2 persons		
- Accommodation and food		5 \$/person × 8 days	80
- Transport		40 \$ × 2 persons	80
<i>Village Health Volunteers Training (4 days)</i>			
- Incentives	15 VHVs	1 \$/person/day × 4 days	60
- Food		40 \$/day × 4 days	160
Training cost			590
<i>Women's group education session (3 days/session)</i>			
- Incentives	50 group education sessions	1.5 \$ × 400 women	600
Project Implementation			600
<i>Facilitators</i>			
	4 facilitators	35 \$/month × 9 months (1 person)	315
		18 \$/person/month × 9 months (3 person)	486
Village Health Volunteers	15 VHVs	1 \$/day	60

Personal			861
Personnel support (Transportation and Food)			1000
Baseline and End-line Survey			
- Interviewers		0.1 \$/questionnaire × 800 questionnaires	80
Community meetings	12 community meetings		
In-depth interviews (IDIs)	8 IDIs	2 \$ × 8	16
Focus group discussions (FGDs)	14 FGDs	10 \$ × 14	140
Monitoring and Evaluation			236
<i>Educational materials</i>			
Pictorial handbook	500 booklets	1.5 \$ × 500	750
<i>Documents and Stationary</i>			
Training materials and guidelines			
- Copying	4000 pages	0.07 \$ × 4000 pages	280
- Binding	75 booklets	0.5 × 75 booklets	37.5
Questionnaires copying	850 questionnaires	0.5 \$ × 850	425
Others			
- Books	12 dozens	4.5 \$ × 12	54
- Books (Lal Gyar)	1 dozen	10 \$ × 1	10
- Bags	20 bags	3 \$ × 22 bags	66
- Paper	2 packs	5 \$ × 2	10
- Pens/ Markers	40	1.2 \$ × 40	48

- Flipcharts	20 (20 pages)	0.5 \$ × 20	10
- Miscellaneous			100
Logistics			
Total			5277.5



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Appendix K: Knowledge items of antenatal care, delivery, postnatal care, breastfeeding and family planning (n = 257)

No	Statement	Correct response	
		Pre- Intervention	Post Intervention
1	First examination should be done within first 3 months.	218 (84.8%)	250 (97.3%)
2	Pregnant woman should stay at home if she suffers severe headache.	18 (7.0%)	249 (96.9%)
3	It is needed to have tetanus vaccination during pregnancy.	231 (89.9%)	253 (98.4%)
4	Pregnant women should check up at least 3 times with health personnel eg. midwife, doctor.	223 (86.8%)	247 (96.1%)
5	Supplementary vitamins are not needed to take after delivery.	104 (40.5%)	223 (86.8%)
6	Morning sickness is a danger sign in pregnant women.	43 (16.7%)	222 (86.4%)
7	Quickening is the sign of variability of fetus.	235 (91.4%)	250 (97.3%)
8	Severe abdominal pain is a danger sign in pregnant mother.	202 (78.6%)	248 (96.5%)
9	Excessive bleeding during delivery can harm both mother and fetus life.	226 (87.9%)	251 (97.7%)
10	Women should go to see the health personnel when she suffers foul smelling discharge per vagina during puerperial period.	205 (79.8%)	245 (95.3%)
11	Colostrums should not feed to the infant.	112 (43.6%)	220 (85.6%)
12	Feeding colostrums can promote easy expulsion of placenta.	204 (79.4%)	251 (97.7%)
13	Feeding colostrums can promote expulsion of breast milk.	221 (86.0%)	251 (97.7%)
14	Breastfeeding can enhance maternal-infant contact.	233 (90.7%)	253 (98.4%)
15	Newborn gets resistance from breast milk (colostrums) and resists disease.	231 (89.9%)	251 (97.7%)
16	Women can have children again by stopping to take pill or injection.	229 (89.1%)	252 (98.1%)
17	Oral pill can cause headache and nausea.	193 (75.1%)	251 (97.7%)
18	Women who take oral pill should take a pill everyday to avoid becoming pregnant.	210 (81.7%)	252 (98.1%)
19	Depo injection should be taken once in 3 months to prevent pregnancy.	227 (88.3%)	253 (98.4%)

Appendix L: Attitude items of antenatal care, delivery, postnatal care, breastfeeding and family planning

No	Statement	Pre-Intervention			Post Intervention		
		Agree	Uncertain	Disagree	Agree	Uncertain	Disagree
1	I consider antenatal care is needed only for sick pregnant woman.	67 (26.1%)	29 (11.3%)	161 (62.6%)	31 (12.1%)	6 (2.3%)	220 (85.6%)
2	I think women should not have bath 7 days after delivery.	152 (59.1%)	21 (8.2%)	84 (32.7%)	93 (36.2%)	7 (2.7%)	157 (61.1%)
3	In my opinion, sexual activity should not be initiated until 6 weeks after giving birth.	228 (88.7%)	18 (7.0%)	11 (4.3%)	249 (96.9%)	4 (1.6%)	4 (1.6%)
4	I consider postnatal check up should be done only when the mother feels sick.	183 (71.2%)	18 (7.0%)	56 (21.8%)	102 (39.7%)	5 (1.9%)	150 (58.4%)
5	I think women should not breastfeed in public places.	88 (34.2%)	18 (7.0%)	151 (58.8%)	80 (31.1%)	4 (1.6%)	173 (67.3%)
6	I think father feel left out if a mother breast-feeds.	120 (46.7%)	41 (16.0%)	96 (37.4%)	135 (52.5%)	6 (2.3%)	116 (45.1%)
7	In my thought, breastfeeding should be stopped if the mother is sick because it can pass infection to the baby.	204 (79.4%)	24 (9.3%)	29 (11.3%)	188 (73.2%)	6 (2.3%)	63 (24.5%)
8	I believe that breastfeeding is easy and economical.	239 (93.0%)	16 (6.2%)	2 (0.8%)	251 (97.7%)	2 (0.8%)	4 (1.6%)
9	I suppose discussion on using contraceptive is not ashamed among couples.	234 (91.1%)	21 (8.2%)	2 (0.8%)	248 (96.5%)	5 (1.9%)	4 (1.6%)
10	I believe that women should stop using Depo injection if she has no menstrual bleeding for a long time.	177 (68.9%)	40 (15.6%)	40 (15.6%)	79 (30.7%)	6 (2.3%)	72 (66.9%)
11	I believe that family planning can improve mother's life.	217 (84.4%)	34 (13.2%)	6 (2.3%)	241 (93.8%)	5 (1.9%)	11 (4.3%)
12	I think that women should not eat much as it can enhance big baby and make difficult delivery.	183 (71.2%)	24 (9.3%)	50 (19.5%)	128 (49.8%)	4 (1.6%)	125 (48.6%)
13	I suppose women should have a rest at least 45 days after delivery a baby.	237 (92.2%)	16 (6.2%)	4 (1.6%)	252 (98.1%)	4 (1.6%)	1 (0.4%)

Appendix M: Intention to practice of maternal health care related behaviors at pre and post intervention (n = 257)

Variables	Pre intervention	Post intervention	Mc-Nemar X ²	p-value
Taking ATT(Anti Tetanus Toxioid)				
Yes	206 (80.2%)	251 (97.7%)	39.510	<0.001
No	51 (19.8%)	6 (2.3%)		
Doing hard work during pregnancy				
Yes	94 (36.6%)	14 (5.4%)	67.837	<0.001
No	163 (63.4%)	243 (94.6%)		
Reducing food intake during pregnancy				
Yes	174 (57.7%)	30 (11.7%)	136.327	<0.001
No	83 (32.3%)	227 (88.3%)		
Cleaning the floor for delivery				
Yes	237 (92.2%)	252 (98.1%)		<0.001
No	20 (7.8%)	5 (1.9%)		
Preparing clean clothes ready to wrap the newborn				
Yes	238 (92.6%)	252 (98.1%)		0.001
No	19 (7.4%)	5 (1.9%)		
Keeping soap and water ready for TBA				
Yes	238 (92.6%)	253 (98.4%)		<0.001
No	19 (7.4%)	4 (1.6%)		
Doing hard work during puerperial period				
Yes	27 (10.5%)	10 (3.9%)	8.828	0.002
No	230 (89.5%)	247 (96.1%)		
Consuming nutritious food and not reduce food intake during puerperial period				
Yes	219 (85.2%)	250 (97.3%)	25.714	<0.001
No	38 (14.8%)	7 (2.7%)		

Appendix M: (Continued) Intention to practice of maternal health care related behaviors at pre and post intervention (n = 257)

Variables	Pre intervention	Post intervention	Mc-Nemar X^2	p-value
Having bath and wash hair for personal hygiene during puerperial period				
Yes	18 (7.0%)	115 (44.7%)	87.771	<0.001
No	218 (84.8%)	142 (55.3%)		
Having breastfeeding				
Intend to have breastfeeding 6 months - 2 years	222 (86.4%)	253 (98.4%)	27.273	<0.001
Undecided	35 (13.6%)	4 (1.6%)		

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Appendix N: Practice of maternal health care related behaviors (n = 11)

Variables	Pre intervention	Post intervention
ATT(Anti Tetanus Toxioid)		
Yes	11	10
No	0	1
Doing hard work during pregnancy		
Yes	5	1
No	6	10
Reducing food intake during pregnancy		
Yes	6	1
No	5	10
Cleaning the floor for delivery		
Yes	11	11
No	0	0
Preparing clean clothes ready to wrap the newborn		
Yes	11	10
No	0	1
Keeping soap and water ready for TBA		
Yes	11	11
No	0	0
Place of delivery		
Hospital or Rural Health Centre		3
Home		8
Doing hard work during puerperial period		
Yes	0	0
No	11	11
Consuming nutritious food and not reduce food intake during puerperial period		
Yes	10	11
No	1	0
Having bath and wash hair for personal hygiene during puerperial period		
Yes	0	11
No	11	0

Vitae

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 - Worked in private clinic at suburb in Yangon
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 - Volunteer Medical Doctor, Catholic Officer for
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 - Volunteer, Shanta Foundation (US), Myanmar