

COLLEGE OF PUBLIC HEALTH SCIENCE

Factors related to antenatal, delivery and postnatal health care practices among female clients of Reproductive Health mobile services, sub-urban Yangon, Myanmar

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บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)
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วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธารณสุขศาสตรมหาบัณฑิต

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การศึกษาครั้งนี้มีวัตถุประสงค์เพื่อศึกษาปัจจัยที่เกี่ยวข้องกับการปฏิบัติตนในการฝากครรภ์ การคลอด และการดูแลหลังคลอดของสตรีวัยเจริญพันธุ์ (49-15ปี) ในทก พื้นที่ย่านซานเมืองของกรุงย่างกุ้ง ประเทศพม่าที่องค์กรUNFPA / MMA ที่ให้บริการโดยหน่วยสุขภาพเคลื่อนที่

วิธีการวิจัยเป็นสำรวจแบบตัดขวาง สัมภาษณ์ โดยให้กลุ่มตัวอย่าง จำนวน 385 คน ตอบแบบสอบถามด้วยตนเอง เกณฑ์การคัดเลือกสำหรับการวิจัยคือสตรีวัยเจริญพันธุ์ที่มาใช้บริการหน่วยสุขภาพเคลื่อนที่ และเต็มใจที่จะเข้าร่วมโครงการ การวิเคราะห์ทางสถิติเชิงพรรณนาและเชิงอนุมานโดยการทดสอบไคสแควร์ และการวัดการถดถอยโลจิสติก ผลการศึกษาพบความชุกสูงของการตั้งครรภ์ที่มีความเสี่ยง เกี่ยวข้องกับปัจจัยต่างๆ ได้แก่ การตั้งครรภ์ในวัยรุ่น (5%) และการตั้งครรภ์ เมื่ออายุมาก (19%) การไม่ได้รับการศึกษา (%13.8กลุ่มที่มีรายได้ต่ำสุด 100,000จ๊าดต่อเดือน (71.4%) ความเชื่อที่ถูกต้องของคุณแลการรักษาสะดือทารกโดยวิธีธรรมชาติ (26.5%) ความเชื่อที่ถูกต้องของการเลี้ยงลูกด้วยน้ำนมแรกของแม่ที่มีคุณค่าทางโภชนาการ(94%) การวิเคราะห์หลายตัวแปรพบว่าเกี่ยวข้องกับปัจจัยต่างๆ ที่มีความสัมพันธ์อย่างมีนัยสำคัญที่ $p < 0.005$ ได้แก่ กลุ่มที่ 1 ได้แก่ จำนวนบุตร ความเชื่อของผู้ให้บริการที่เกี่ยวข้องกับการฝากครรภ์ การเข้าถึงข้อมูลเรื่องการฝากครรภ์ควรเป็นสี่หรือมากกว่า กลุ่มที่ 2 ได้แก่ การศึกษาของกลุ่มตัวอย่าง ความเชื่อเกี่ยวกับสถานที่คลอด ค่าใช้จ่ายในการคลอดโดยหมอด่าแยที่ผ่านการอบรม 3แหล่งที่มาของความเชื่อที่เกี่ยวข้องกับหลังคลอด, การเข้าถึงข้อมูล อายุของหญิงหลังคลอด ความเชื่อเรื่อง หลังคลอดในการมารับบริการมากกว่า 6 ครั้ง ($p < (0.05$ ข้อเสนอแนะ ควรให้ข้อมูลด้านสุขภาพที่มีประสิทธิภาพแก่สตรีวัยเจริญพันธุ์ โดยเฉพาะอย่างยิ่งกับผู้หญิงวัยรุ่นและผู้หญิงที่มีอายุตอนปลายวัยวัยเจริญพันธุ์ การดูแล ทำความสะอาดสะดือทารก ที่ถูกต้อง และให้คำปรึกษาเกี่ยวกับความเชื่อหลังคลอดที่เป็นอันตราย

สาขาวิชาสาธารณสุข.....

ลายเซ็นของนักเรียน

ปีการศึกษา.....2555.....

ลายเซ็นอาจารย์ที่ปรึกษาของ

5478812053: MAJOR PUBLIC HEALTH

KEYWORDS: ANC/ DELIVERY/ PNC/ BELIEFS/ PRACTICES/MOBILE CLINICS/ SUBURB YANGON/ MYANMAR

HLAING HTAIK HTA KHIN: FACTORS RELATED TO ANTENATAL, DELIVERY AND POSTNATAL HEALTH CARE AMONG FEMALE CLIENTS OF REPRODUCTIVE HEALTH MOBILE SERVICES, SUBURBAN YANGON, MYANMAR. ADVISOR: DR. ALESSIO PANZA., MD., M.Com.H., DTMH. 102 pp.

The **objective** of the study was to investigate factors related to the practice of antenatal, delivery and postnatal care among reproductive age women (15-49 years) in six suburb townships of Yangon division, Myanmar where UNFPA/MMA reproductive health mobile services are available. **Methodology**: cross sectional survey of 385 women using interviewer administered questionnaire. All women attending the mobile services, meeting inclusion criteria and willing to participate were interviewed till the sample size was reached. Descriptive and inferential statistical analysis by chi-square test and logistic regression was used. **Results** showed high prevalence of at risk pregnancies: teenage (5%) and late age pregnancy (19%), illiterate (13.8%), lowest income group <100,000 kyats per month (71.4%), correct belief of natural healing of umbilical stump wound (26.5%), correct beliefs of colostrum breastfeeding to baby is nutritious (94%). Multivariable analysis showed the following highly significant associations ($p < 0.005$). 1. Number of children, provider of ANC related beliefs, access to information with four or more ANC visits. 2. Education of women, source of delivery related beliefs, delivery cost with institutional delivery by skilled birth attendant. 3. Source of postnatal related beliefs, access to information, age of women, postnatal beliefs (the latter two at $p < 0.05$) with six or more postnatal visits. **Recommendations**: provide effective reproductive health information to all women in particular to teenage and late age pregnant women, standardization of umbilical wound care and counselling on harmful postnatal beliefs.

Field of Study: ..Public Health...

Student's Signature.....

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LISTS OF ABBREVIATION

UNFPA	United Nation Population Fund
MMA	Myanmar Medical Association
UNICEF	United Nation Children's Fund
WHO	World Health Organization
MOH	Ministry of Health
DMR	Department of Medical Research
ANC	Antenatal Care
PNC	Postnatal Care
RH	Reproductive Health
ICPD	International Conference on Population and Development
MDG	Millennium Development Goal
TBA	Traditional Birth Attendant
TTBA	Trained Traditional Birth Attendant
RHC	Rural Health Centre
MCH	Maternal and Child Health

CHAPTER I

INTRODUCTION

1.1 Background

For many centuries, human groups have developed elaborated theories, rituals and practices to deal with in critical life process such as health care practices. As far as the reproductive health concern, which has become one of the global issues since 1980s, many folk practices are still existed and practiced among us. Some of their beliefs are scientifically sound and it can be used to support the healthy lifestyle, while some others work against the successful health practices which needed to be reduced or modified.

While pregnancy taboos and delivery practices have received a good deal of attention, beliefs and rituals concerning breast feeding have been largely ignored. Many of these steps are still practiced to varying degrees by many women because an adequate flow of good quality milk can be disrupted by factors a mother does not understand. At the same time she may blame her breast milk for her baby's illness and withhold the milk that the baby needs (Fernandez and Gutherie, 1984). For instance, among many Myanmar families, meals for pregnant and lactating women are restricted especially in variety of food item. It roots from the traditional false beliefs that a number of food items taken by the mother may cause disease or harm to the fetus and the breast-fed babies (Kyi, 2006). Encountering a lactating mother eating nothing but rice and dry fish is quite often with the folk belief that ingesting variety of food during nursing will induce the suckling baby with abdominal colic, diarrhea etc. Young mothers with low educational status living in extended families are the most vulnerable because they cannot overcome the influence of the elderly people who insist on restriction of food items during pregnancy and lactation.

Myanmar has a population of 58.38 million in 2008-2009 with the growth rate of 1.52%. The maternal mortality rate (MMR) continues to be high ranging from 316 to 380 per 100,000 live births. More than ninety per cent of deliveries take place at home (UNFPA, 2010a). Moreover, 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 (MOH, 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 8.6% of postnatal women were practicing postnatal care in rural (UNICEF, 2005).

The rate of deliveries attended by doctors, nurses and midwives (skilled birth attendants) is 57%. 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 45.35% of deliveries. Most deliveries occur at home, with 56.6% of deliveries occurring at home in urban areas and 91.25% at home in rural areas (UNFPA, 2006).

United Nations Population Funds (UNFPA) Myanmar is delivering through public sector delivery point in 132 townships with reproductive health (RH) commodities including contraceptives, clean delivery kits, medicines, supplies and equipment for maternal and new born as well as for emergency obstetric care, and almost all basic health staff in those townships received training on RH services, using WHO modules on PCPNC (Prenatal, childbirth, postnatal and new born care) and quality RH services for birth spacing, post-abortion care and other, etc. In the project townships, the data for 2007 and 2008 indicate the increase in antenatal care coverage from 64.4% to 68.2%, increase in skilled birth attendance rate from 47.7% to 49.4%, and increase in contraceptive prevalence rate from 64.3% to 66.1% respectively (UNFPA, 2010). UNFPA's reproductive health programme covers almost half of the entire reproductive population of Myanmar.

Rationale

Even though above mentioned intervention are implemented among half of entire reproductive population of Myanmar, the cases of negative health outcome due to malpractices of RH are still challenging to the health system of the nation.

In order to observe the impact of folk beliefs, socio demographic and accessibility factors etc. in traditional reproductive health practices, it is crucial to study those factors among women in RH age who are particularly vulnerable. The sub-urban townships of Yangon division where UNFPA/MMA (Myanmar Medical Association)-RH projects were implemented, high proportion of vulnerable female clients who use to UNFPA/MMA-RH mobile clinic project at each township are

targeted for this study. In the past few years, many suburb townships of Yangon division had implemented RH project by UNFPA with local implementing partner MMA by recruiting all trained medical doctors as service providers. Even though there are a few fixed clinics at RHC (Rural Health Center) and Sub-health center providing RH services by midwives or lady health visitors, there could be a unmet need among clients due to very limited number of health personnel at fixed clinic to cover all ANC and PNC care to every women.

With the finding from this study we would hopefully identify the key influencing factors to consider in strengthening of RH intervention in Myanmar.

1.2 Overall Objective

The overall objectives of this study is to investigate factors related to the practice of Antenatal care (ANC), delivery and postnatal care (PNC) among reproductive age women in the townships of Yangon division where UNFPA/MMA-RH mobile services available.

Specific objectives

- To study of socio-demographic factors related to ANC, delivery and PNC behaviors.
- To explore traditional beliefs influencing (ANC, delivery, PNC) among Myanmar women clients at RH mobile services
- To study of accessibility factors related to ANC, delivery and PNC among Myanmar women clients at RH mobile services.

1.3 Research Hypothesis

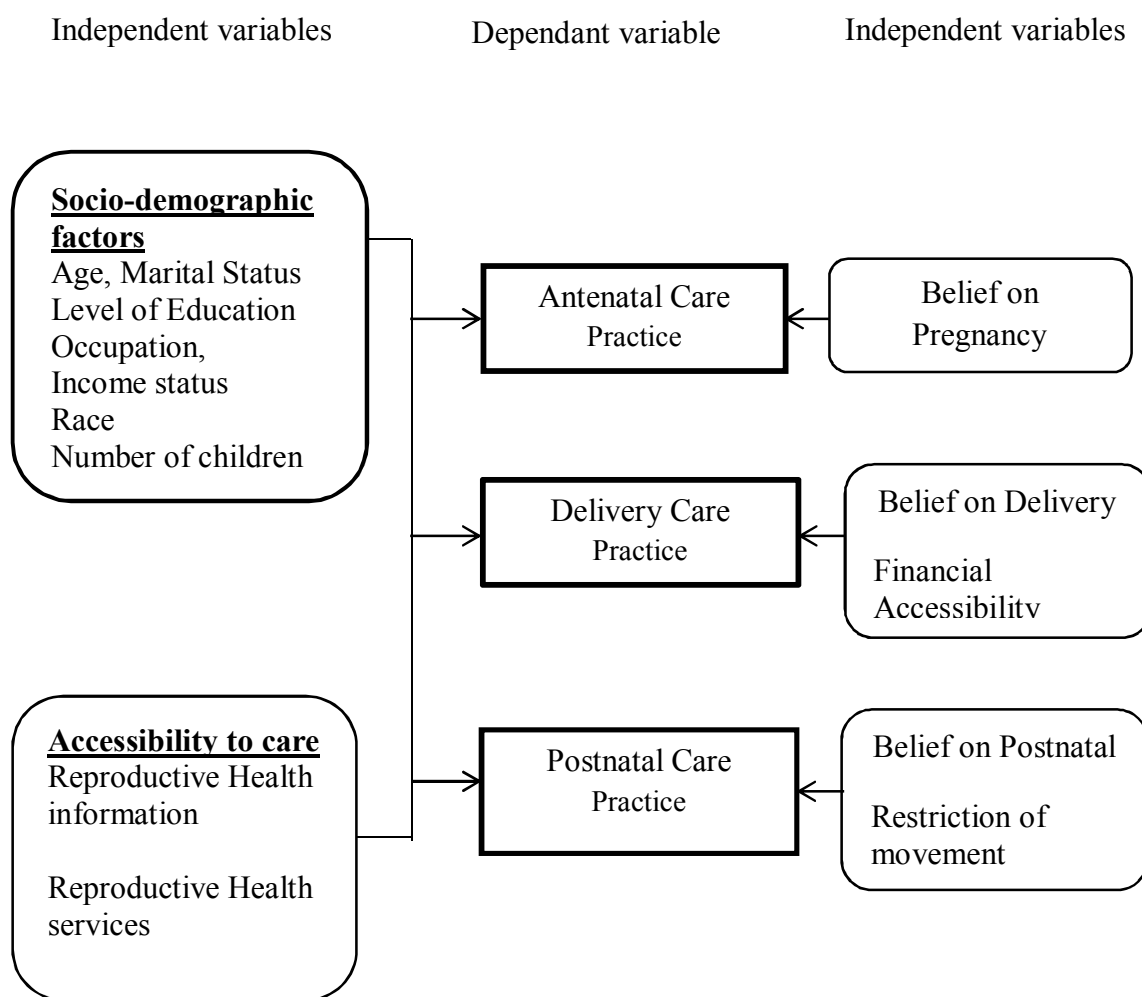
- Socio demographic factors such as Age, Marital status, level of education, occupation, parity, income status, race are associated with reproductive aged women's practices on antenatal, delivery and postnatal care.
- Belief on pregnancy care, delivery care, wound healing care, breastfeeding care, nutritional intake during pregnancy and postpartum, other cultural belief are associated with antenatal care, delivery care and postnatal care practices.
- Access to RH information, RH services, financial access are associated with antenatal, delivery and post natal care practices.

1.4 Research Questions

- What socio-demographic factors are influencing the practices of antenatal, delivery and post natal health care among female clients of reproductive health mobile services?
- What are the health beliefs influencing antenatal, delivery and post natal health care practices among female clients of reproductive health mobile services?
- What factors are influencing the accessibility of these women from antenatal, delivery and post natal health care among female clients of reproductive health mobile services?

1.5 Conceptual Framework

Figure 1 Conceptual framework



1.6 Operational Definitions

Table 1 Operational definition of terms used in the research

No	Variable	Operational definitions
1.	RH services of mobile clinic <u>Sociodemographic factors</u>	It refers to providing antenatal care, postnatal care, birth spacing and health education during mobile services.
2.	Reproductive Aged women	It refers to self-reported completed years of aged between 15-49 years at the time of the interview.
3.	Marital Status	It is categorized as married, divorced/separated and widow.
4.	Level of education	It refers to respondent's highest educational attainments which were classified as illiterate, primary school (kindergarten-4 th grade), middle school (5 th -8 th grade), high school (9 th -10 th), university and graduate. Respondent's status of employment at the time of survey.
5.	Respondent's Employment	It was divided into Employed and Housewife.
6.	Husbands Employment	Employment status of respondent's husband was categorized as employed and unemployed.
7.	Income status	Total monthly income by whole family living under same household.
8.	Race	It is generally stated as Myanmar (majority), Chinese, Indian, Mon, Karen and other ethnic group.
9.	<u>Pregnancy related belief</u>	It refers the beliefs on use of ANC at least 4 visits and providers of ANC. Beliefs on diet intake and other culture in pregnancy. The Cultural beliefs investigated are Betel chewing, Smoking, Not to go out of house, Heavy work etc.
10.	<u>Delivery</u>	It refers to beliefs on place for delivery, provider of care

	<u>related beliefs</u>	for delivery, provider of care for birth canal wound of mother and beliefs on umbilical stump of baby. It also include person influencing those beliefs, relatives, elders, TBA, self and health professionals.
11.	<u>Post natal related beliefs</u>	It refers to beliefs on after birth care, breastfeeding (use of colostrum, duration of breastfeeding) and traditional postnatal beliefs (taking turmeric, smearing turmeric, induced perspiration, hot brick fomentation, avoid exposure to wind, home confinement). It also includes beliefs on diet intake and other culture in pregnancy. The cultural beliefs investigated are Betel chewing, Smoking, Not to go out of house, Heavy work etc.
12.	<u>Accessibility</u>	
12.1	Access to RH information	It states as ever heard of reproductive health information by resources and main sources of RH information. It includes health talks by professional, media, elders and other hearsay sources.
12.2	Access to RH services	It refers to respondent's easily accessibility to any reproductive health care services.
12.3	Financial Access	It represents respondent's accessibilities to antenatal, delivery and postnatal care become limitation due to higher cost beyond respondent's affordability.
13.	<u>Antenatal care practices</u>	It is assessed by receiving at least 4 ANC visits at the scheduled time during ongoing or last reported pregnancy.
14.	<u>Delivery care behaviours</u>	It is assessed by what kind of delivery services used by clients for their last reported pregnancy.
15.	<u>Post natal care behaviours</u>	It is assessed by receiving at least 6 PNC visits at the scheduled time during on-going or last reported pregnancy.

CHAPTER II

LITERATURE REVIEW

Yangon division where Yangon city, once it was capital city of Myanmar is formed with four districts, which are, Yangon East district, Yangon West district, Yangon North district and Yangon South district and it is made up of 45 townships. There are 33 townships within Yangon municipal zone, 12 are the rural townships outside the municipal zone. Out of 33 townships, 10 townships are in the Yangon city centre and the rest 23 townships are in the suburb of Yangon. UNFPA/MMA had implemented RH projects in some of suburban Yangon townships in last 3-4 years. Its projects are expanded every year. In suburb Yangon, there are total 9 townships (South Dagon, Kye Myin dine, Dallah, Hlaing Tharyar, Mingalardon, Inn Sein, Daw Pon, Thanlwin) of suburb Yangon that have mobile services at 17 project sites by UNFPA/MMA for year 2012. In these townships are therefore the only sites for mobile services. According to the data collected from 2011 client registration record at UNFPA/MMA-RH mobile clinics, 50% of clients are accounted for ANC, 40% for family planning and 10% for PNC (ie, postpartum check-up). There are also very few fixed clinics at RHC (Rural Health Center)/ sub health center providing RH services by midwives or lady health visitor, there could be a unmet need among clients due to very limited number of health personnel at fixed clinic to cover all ANC and PNC care to every women. Therefore, Complimentary Services provided by medical doctors of UNFPA/MMA mobile clinics bring the greatest benefits for every women needs.

Township is the administrative zone within the city of Yangon officially stated by government. Suburban is the local term which comprises of many townships outside the Yangon city centre townships.

2.1 Socio-demographic factors

Socio-demographic factors have been shown to be of greater importance in determining reproductive health service use. It is also mediated by cultural influences on health-seeking behaviour that shape the way individuals perceive their own health and the health services available. The community beliefs and norms are reflected in an individual's health decisions; behaviour is influenced by how a person thinks the

community views his or her actions. For example, traditional beliefs about childbirth, with misconceptions and fears of medical services, have led many women to maintain reliance on home births in India. (Stephen et al., 2006) Demographic factors which have been proven to increase usage of health service are low parities, younger maternal age, women's employment in skilled work outside the home, and high levels of husbands' education.

Most consistently found determinants of use of reproductive health services has been a woman's level of education. Higher education level influences service use by increasing female decision making power, increasing awareness of health services, changing marriage patterns, and creating shifts in household dynamics. Another factor, cost has often been shown to be a barrier to service use and also influences the source from which care is sought. Socioeconomic indicators such as urban residence, household living conditions, household income, and occupational status have also proven to be strong predictors of a woman's likelihood of using reproductive health services. (Stephenson et.al 2006)

Marital and co habitation status of women is also should be considered for peri-natal risk and medical needs during pregnancy. In 1981, a survey of sample of 5508 births in France studied the social characteristics of pregnant women, the medical care they received during their pregnancy and their pregnancy outcome, as a function of their marital status and whether or not they lived with the father of the child. Unmarried women living with the father (n = 412) and unmarried women living alone (n = 171), were more often younger, having their first baby and had a lower educational level than did married women living with the father (n = 4590). However, among the unmarried women who living alone were in a more unfavourable position than those living with the father particularly those younger than 20 years old, low education level and unemployed. Both groups of unmarried women had a higher preterm delivery rate than married women, with taking other risk factors into account in a logistic regression. The odds ratios (95% confidence interval) for pre-term delivery among unmarried mothers living without the father was 1.9 (1.0–3.4) and that for the unmarried cohabiting with the father was 1.6 (1.0–2.4). (Blonde, 2008)

2.2 Pregnancy, Delivery and Postnatal related Beliefs

Traditional beliefs and practices related to health among different ethnic groups divided into three groups: (1) beliefs that result in no harmful health effects, (2) beliefs that may produce positive health outcomes, and (3) beliefs and traditions which have serious, harmful health outcomes. (Morisky, 2002)

(1) Harmless Beliefs

Societies and cultures throughout the world are filled with traditional health beliefs and practices surrounding fertility. For example, pregnant women in many Asian cultures are advised that if they eat blackberries their babies will have black spots or that if they eat a twin banana they will give birth to twins. Among Vietnamese community, they commonly use herbal medicines when they fall ill and a set of indigenous folk practices referred to as "southern medicine" in an effort to restore the yin/yang balance. These practices, from the Western viewpoint, were once thought to pose barriers to health. In some culture, women believe that semen will poison the breast milk if the couple has sexual intercourse while the woman is lactating. In China, to determine the sex of baby during pregnancy, if the belly is "pointed" it will be a boy and if the belly is "rounded" it will be a girl. Another belief in China is that crying out during labour will attract evil spirits to the new child, so silence is recommended to protect baby. (Anonymous, 2005)

We can conclude that certain beliefs and practices predicted neither lack of access to, nor underutilization of health services. In fact, individuals should not be discouraged from placing faith in such beliefs, as they may result in positive health outcomes.

(2) Positive Health Outcomes

Chinese beliefs with positive health results during postpartum nutritional intake are listed as follow. Postpartum is considered a "cold" condition due to blood loss during labour. Hot foods are required to rebuild lost blood supply. If cold foods are eaten at this time it can result in headache or arthritis in old age. Hot foods would include, hot

water, hot tea, ginger, vinegar, pig's feet and high protein meats, although beef should be avoided because it slows healing. (Anonymous, 2005)

Choudhury and Ahmed (2011) reported that among ultra poor women in Bangladesh believe to keep the stomach cool by ingesting rice, smashed potato with spices, raw tea, green banana, black cumin, poppy seed, fenugreek leaves etc during the post partum period for the best production of breast milk.

(Morgan, 1976) and (Myntti, C 1979) also stated that some women believe that breastfeeding will adversely change the shape of the mother's breasts. Hence, the women may turn to bottle-feeding as opposed to breastfeeding. This belief may be more important to fashion-conscious women in modern society.

(3) Negative Outcomes

On the other side of the scale are health beliefs and practices that result in physical harm or negative health outcomes. Female circumcision, or female genital mutilation (FGM), is a graphic illustration of a traditional practice with a negative health outcome. The FGM ensures virginity and family honour, maintain cleanliness, promotes the economic and social future of daughters, and perpetuates a "religious tradition", maintains group identity, secure fertility including enhancement of sexual pleasure for men. As of 2001, the practice was outlawed in the United Kingdom, Sweden, Belgium, the United States, Canada, Switzerland, France, Denmark, and in some African nations, such as Egypt, Kenya, and Senegal. Complications occurring immediately after the practice are ranging from disability to premature death and it is also believed to play a significant role in the transmission of human immunodeficiency virus (HIV) infection through numerous mechanisms (Eke, 1999).

Kleinman and Senanayake, 1984 also stated that in Papua New Guinea, one common belief among mothers with urban, non-traditional lifestyles is that in order to resume sexual intercourse, they tend to stop breastfeeding for about three months after delivery in favour of bottle-feeding. (Kleinman, 1984). Among ultra poor women in rural Bangladesh studies stated that those women's belief on nutritional intake during

antenatal and postnatal period was strictly prohibited. Food such as ducks, pigeons, beef and hilsa fish are considered as hot and restricted during pregnancy. During postnatal period, first 5-9 days of isolation from proper nutrition intake is imposed on them. Most food available and also at affordable range among these extreme poor households women was thought to be inappropriate during lactation. No food was allowed to take during the first day after delivery for fast healing process of birth canal. Mother in law and the elders played important role in deciding what food are allowed to eat by new mother. However, some special traditional food meant for healing to be consumed during first few days of post partum only whilst the food restriction continues for another 21-40 days. (Choudhury and Ahmed, 2011)

Another study on regarding dietary restriction among pregnant Burmese refugee women is taken place in USA related to compromise nutritional status among women and children especially ethnic groups. It can increase lead absorption which makes the prenatal nutrition counseling important. The CDC (Centers for disease control and prevention, USA) 2009 investigation in the refugee camps found moderate to severe anemia in 16% of children tested (Mitchell, 2009). Anemia and inadequate diet are also associated with pica (eating non-food items such as soil), which can increase risk of lead exposure and also make the prenatal nutrition counseling important during the pregnancy. Data from six U.S. states where refugees are resettled showed elevated blood lead levels in 13% of Burmese children—eight times the U.S. prevalence (CDC, 2008)

Regarding nutrition intake during pregnancy, a study showed that mothers who had high carbohydrate intakes in early pregnancy had babies with lower placental and birth weights. Low maternal intakes of dairy and meat protein in late pregnancy were also associated with lower placental and birth weights. These findings suggest that a high carbohydrate intake in early pregnancy suppresses placental growth, especially if combined with a low dairy protein intake in late pregnancy.

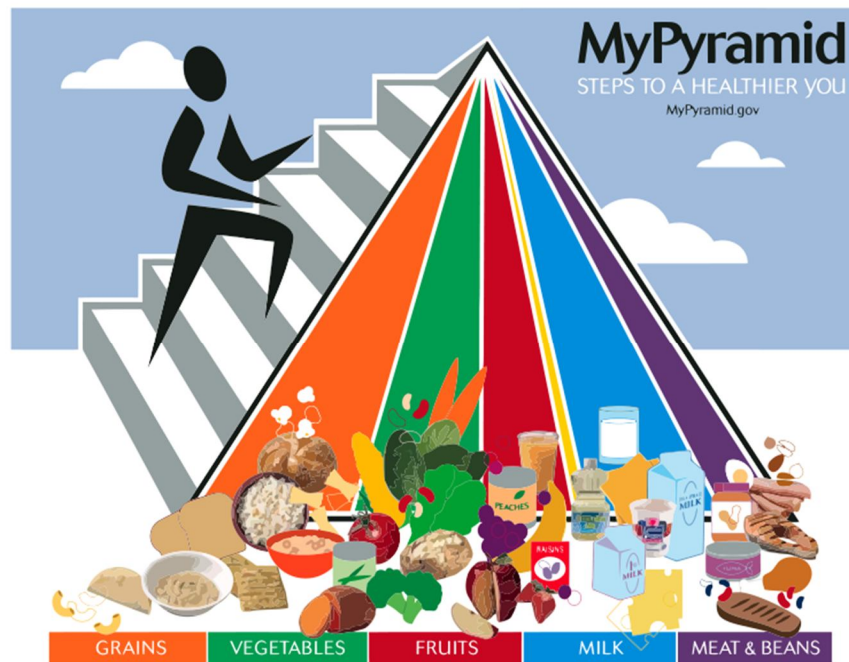


Figure 2 USA Food Pyramid (United States Department of Agriculture- 2005)

The 3 basic food groups are carbohydrates, fats, protein. The different food items are divided into three major food groups according to their functions: such as Energy giving food (eg, like rice, pasta, bread), Body building food (eg, dairy and meat) and Protective food (eg, vegetables and fruits). (Shils et al. (2005). Dietary fat includes all the lipids in plant and animal tissues that are eaten as food. The most common dietary fatty acids have been divided into three classes according to the degree of unsaturation; saturated fatty acids (SFA), mono-saturated fatty acid and poly-saturated fatty acid. (FAO, 2008)

Fernandez and Guthrie (1984) also stated that some women will stop breastfeeding upon the birth of a new child. This is because they believe that the second child will become sick and die if they try to feed both children simultaneously. In addition to this beliefs, the feeling of mother also play a role in affecting the duration of breastfeeding. They found among Filipina that if women feel angry, grievous or ill they will stop breastfeeding considering these ill feeling will be transferred to the baby through their breast milk. (Fernandez and Guthrie, 1984)

It is also found that proportion of mothers who had food taboos was significantly higher among mothers of infants who were diagnosed as beri beri (43.1%) than

among mothers of normal babies (10.8%). (Shwe, et al., 2001-2002) A study on thiamin status of pregnant and lactating women and infantile beri beri among Kayan, Yangon Division, in 1997 using transketolase enzymes activity stimulating test indicated that 12.9% of subjects were in deficient state. Availability of thiamin in cooked rice is 10.74 mcg for 137 kcal or 0.08 mg/1000 kcal which was much lower than the recommended dietary allowance of 0.4 mg/1000 kcal. In another study, breast milk thiamin level of mothers of normal babies clinically diagnosed as beri beri (8.6 mcg/dl) was significantly lower than that of mother of normal babies (10.35 mcg/dl). Kyi, 2006 also stated that during period between June 2005 and January 2006, total 81 cases of infantile beri beri were reported to National Nutrition Center (NNC). One to three months old babies are accounted for large majority (91%) of the cases, of which 16 cases from Hlaing Thar Yar township, 4 cases each from South Dagon, Kyi Myin Dine townships of Yangon Division. It indicated that due to food restriction during antenatal and postnatal period resulting harmful health outcomes. (Kyi, 2006)

Population growth rate is 0.9% in 2007, Infant mortality rate/1000 live birth (IMR) is increased from 35.9% in 2005 to 62.2% in 2007, Maternal mortality rate/ 1000 livebirth (MMR) increase from 0.4% in 2006 to 1% in 2007 in New Dagon township. As for IMR in Kyi Myin Dine township is 51.8%, MMR is at 2%.(UNFPA/MOH, 2007). Majority of the female youth had chosen institutional delivery. Nevertheless a considerable proportion of female youth (38.8%) delivered at home, particularly those from rural area of Kyemyindaing township. 92.3% of them attended at least one ANC visit, 37% of youth female practiced domiciliary delivery. Almost 79% of home deliveries were conducted by Traditional Birth Attendant (TBA). Overall 30.6% female youth delivered their last baby with TBA whilst 70% of deliveries were conducted by skilled birth attendants. (Sein, 2010) It is not surprising that several countries in South East Asia region including Myanmar, TBA role will continue to be key providers of delivery care. (Fernando, 2004)

Among Myanmar female, variation in avoidance and practices were found regarding cultural beliefs and practices during postpartum period. Avoidance of certain foods,

sex, cold exposure and strenuous tasks etc. were practiced for the wellbeing of both mother and new born. Those beliefs and behaviours are handed down from generation after generation, such as, eating suitable foods, eating and applying turmeric, hot brick fomentation, induced perspiration, home confinement, massage etc. food restrictions, drinking and applying of turmeric were also common practices among postnatal women in central Myanmar. (Chit, 2007) Sexual abstinence was strictly followed by all female as they believed that it causes reverse flow of postpartum blood and endanger life. They interpret amenorrhoea during pregnancy make accumulation of bad blood. They avoid doing strenuous task such as fetching water, lifting heavy task which could cause heavy bleeding and prolapsed uterus (Sein, 2010). Same study also revealed that Crying, quarrelling, insulting cause severe headache and cessation of milk or lactation. Other ANC and PNC Belief are as follow: “Not to bargain is that it would cause difficult labour due to curse”, “not to wear high heel could lead to slip and fall”, “alcohol, cigarette, betel chewing could lead to difficult labour.” (Sein, 2010). Another Chinese cultural belief on breastfeeding the first milk, "colostrum" to the baby is considered stale or dirty, therefore it is discarded. They also believed the placenta must be kept and buried near the birth place so that in death it may be worn into heaven as a symbol of atonement and humility of earth life. It is required to be reborn. (Anonymous, 2005)

2.3 Accessibility to care

Access to reproductive health care is a multidimensional concept with multiple determinants. The 1994 International Conference on Population and Development (ICPD), Cairo affirmed the need to ensure access, declaring: *“All countries should strive to make accessible through the primary health care system, reproductive health care to all individuals of appropriate ages as soon as possible and no later than 2015.”* There is also other aspect to consider, such as the affordability and cultural acceptability of the services, the availability of information about the services, and client satisfaction about those services. The poor quality of services and inappropriate treatment of patients are barriers to service utilization in many low income countries. An adequate study of accessibility of services will require a number of indicators.

Study of inequalities in health care access and usage requires all subgroups of the population (for example, age, socioeconomic status, sex, geographical location, ethnic group and disability) to be systematically considered. Different levels of need for health care should also be taken into account in studies of health care inequalities. (WHO/UNFPA, 2003)

These determinant use of reproductive health care are also mediated by cultural influences on health-seeking behaviour that shape the way individuals perceive their own health and the health services available. (Stephenson et al. 2006)

A qualitative study in Bangladesh by Choudhury and Ahmed, 2011 revealed that ultra poor household women in Rangpur and Kurigram district, become weak with severe body aches (11 out of 20 interviews) after delivery lasted for one to three weeks. None of them had gone to any health providers for seeking any service for this illness. This is because they were not even aware about the availability of the postpartum check-up. As for those who would like to get access to those care, they perceived that they were treated in such a manner by health worker because of low socioeconomic status.

There are also many restrictions in mobility during pregnancy such as they avoid leaving the house during the noon, evening and night as they believe that evil spirit are more active during those hours. They also believe solar or lunar eclipse could affect pregnant women. That is why they had to stay inside the household, walked near the home or inside the home.

It is also reported that most women did not contact to TBA in advance due to financial burden of TBA will make some black magic in advance during pregnancy so that there would not be a easy delivery and they have to pay higher for delivery. Moreover, regarding cutting of umbilical cord, in order to save some money some women preferred to cut it themselves in their last delivery. If any other women, eg TBA, had cut the umbilical cord, they had to pay a minimum of Tk.20 (US\$0.30). (Choudhury and Ahmed , 2011)

2.4 Quality Antenatal and Postnatal practices

“**Reproductive age women**” refer to all women aged between 15 to 49 years (UNFPA, 2010b)

'Definition of Reproductive health'

“a state of complete physical, mental and social well-being and...not merely the absence of disease or infirmity, in all matters relating to the reproductive system and its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so. Implicit in this last condition are the right of men and women to be informed [about] and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of birth control which are not against the law, and the right of access to appropriate health-care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant.” (UN-DPI, 1994)

Ante natal care (ANC)

Regular routine AN visit is stated as 1st visit before 4 months (12th week or as early as possible), 2nd visit around 6-7 months (26th week), 3rd visit around 8 months (32nd week), 4th visit around 9 months (36th to 38th week).

It is the health care given to pregnant mothers to promote and maintain the physical, mental and social health of mother and baby by providing education on nutrition, personal hygiene and birthing process. It develop birth preparedness and complication readiness plan and help prepare mother to breastfeed successfully, experience normal puerperium, and take good care of the child physically, psychologically and socially. (MMA/DOH/UNFPA, 2010)

Quality antenatal care include: regular check-up, record keeping, medical, obstetric history and examination, TT injection (proper, timing, cold chain), check urine albumin, sugar, check VDRL, check Haemoglobin (Hb), iron and folate (60 mg+400ug) supplement, mebendazole 500mg for deworming, vitamin B1 as needed, birth preparedness and plan for emergency, health education and counselling for

danger signs, birth plan, birth spacing, breast feeding, healthy life style, PMCT etc. (MMA/DOH/UNFPA, 2010). Of all above ANC services, UNFPA/MMA mobile clinics provided above services to all clients except TT injection and VDRL, Hb test which they need to check at RHC. Clients are required to present these certificates at every ANC visit.

In Millenium Development Goal (MDG) the goal five stated to achieve maternal health by reducing maternal mortality ratio by three quarter between 1990 and 2015, target 5.B, one of the indicators for monitoring progress in 5.5 stated that antenatal care coverage (at least one visit and at least four visits) to achieve universal access to reproductive health by 2015. (United Nation, 2008)

Delivery Care

TBA does exist and performed deliveries mostly in rural areas, they were culturally acceptable, accessible, and they can influence the decision whether mother should go to the health services. (Brouwere, et al. 1998) In many developing countries, the majority of births occur without the help of a skilled assistant (defined as a midwife, nurse trained as midwife, or a doctor) at home or in other non-hospital settings. Home deliveries in the absence of skilled professional attendants have been associated with adverse infant and maternal outcome. However, home deliveries without a skilled attendant occur for a variety of reasons, including long distances or difficult access to a birth facility, costs of services and perceived lack of quality of care in a health facility. (Eijk et al., 2006) Some of TBAs carry out procedures which are considered to be potentially harmful with the finding of nearly 30% of TBAs have administered herbs; 45% attend to abnormal deliveries such as breech, multiple pregnancies. 26.7% re-use their cord cutting tools and in the case of haemorrhage 23.4% do manual procedures within reproductive tract of delivering women. (Lech and Mngadi, 2005) Another study on delivery care found that countries using Model 2: delivery takes place at home but is performed by professional, Model 3: delivery performed by professional in a basic essential obstetric care facility, Model 4, all women give birth in a comprehensive essential obstetric care facility with the help of professionals, have reduced maternal mortality ratios to 50 or less per 100 000. As for Model 1, deliveries are conducted at home by a community member who has received brief

training, there is no evidence that it can provide a maternal mortality ratio under 100 per 100 000 live births. If strong referral mechanisms are in place the introduction of a professional attendant can lead to a marked reduction in the maternal mortality ratio. (Koblinsky et al, 1999)

In Myanmar the community-based structures of the Ministry of Health (MOH), which often include health posts, community health workers and trained traditional birth attendants (TBA), allow health services to be delivered as close to the population as possible. Policies and guidelines for trained TBA are to involve them involved in ANC, PNC including birth registration but not in assisting the delivery. However, in practice TBA are still attending deliveries. To solve this problem, during the period where human resources for health cannot meet the standard, volunteers have to be trained to support existing midwives for delivery at rural areas and to gradually phase out traditional birth attendants.

National governments and ministries of health are generally promoting institutional deliveries attended by trained health workers, rather than the use of traditional birth attendants (TBAs), and it is likely that the proportion of home births attended by TBAs will decline over time. However there are now recommendations for home visits during the first week of life, in order to improve care of newborns. Community workers (including TBAs) who provide these home visits for newborn care can also be enlisted to support birth registration at the community level. (Muzzi, 2010)

Post natal care (PNC)

Frequency of PN visit is also stated as health check to mother and baby immediately after postpartum, 2nd check after 6-12 hours postpartum, 3rd check is 2-3 days of postpartum, 4th check at 4-6 weeks postpartum at least six times by health professional. (MMA/DOH/UNFPA, 2010)

It is the care given to mothers for six weeks following child birth to check any risk in the postpartum period, to examine maternal system especially pelvic organs return to pre pregnant state, counselling the mothers on nutrition, birth spacing, breast feeding and other danger harmful signs and practices. PNC includes the health status check of mother and child for blood loss, pain, blood pressure, child breathing, feeding,

Table 2 Township RH Profiles, Kyi Myin Dine Township (UNFPA, 2007)

Reproductive health data

Item	2005	2006	2007
% of Home deliveries (health staff)	8.6	9.3	13.7
% of home deliveries (AMW)	10.9	7.0	8.9
% of deliveries at RHC delivery room	7.5	7.5	7.4
Average no of ANC attendance	3	3	4
Average no. of PNC attendance	1	2	5
ANC coverage %	42.3	50.4	66.3

Total population: 90941

Female population: 45443

15-49 yrs population: 48264

Table 3 Township RH Profile, Dallah township (UNFPA/MOH, 2007)

Reproductive health data

Item	2005	2006	2007
% of Home deliveries (health staff)	34.9	24.5	30.1
% of home deliveries (AMW)	-	-	2.3
% of deliveries at RHC delivery room	-	-	-
Average no of attendance (AN)	2	2	3
Average no. of attendance (PN)	1	3	4
ANC coverage %	81.8	77.5	71.7

Total population: 147131

Female population: 74123

15-49 yrs population: 77950

Above two townships were among six townships mobile clinics project was implemented by UNFPA/MMA during the survey period February and March, 2012.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

The study was designed as mixed Cross-sectional Quantitative Analytical and Qualitative research study to explore traditional beliefs and other factors influencing ANC, Delivery, PNC behaviours among reproductive aged female clients at RH mobile services. Qualitative research was conducted through informal interviews with two service providers, one traditional birth attendants (TBA) and one woman attending birth spacing services.

3.2 Study area

Research was carried out at the six sub-urban townships of Yangon Division, Myanmar where UNFPA/MMA-Reproductive health mobile service clinics are available. Those services are available every three monthly to reproductive aged female who reside in that community. Service consists of providing quality ANC, PNC, Family planning counseling and Birth-spacing by group of professional medical doctors. The mobile clinic was the best place where majority of RH aged women gather for different types of health services. There are also fixed clinics operated by government nurses/midwives at Rural Health Centre (RHC) and some private clinics. But due to charges incurred by those fixed clinics, most women like to seek UNFPA/MMA mobile health services (1) for free of charge by mobile team of many medical doctors (2) for Health education talks and (3) for collection of free medicines, other medical supplies such as clean delivery kits, baby napkin etc.

During the study period (February/ March), there were 6 mobile clinics at 6 different sub-urban townships available for data collection. UNFPA/MMA represents 90% of the sub-urban Yangon mobile services of the townships since there is only one RH mobile services operated by MSI (Marie Stope International) NGO in one suburb township.

3.3 Study population

All reproductive aged female clients of 15-49 years old who visit mobile clinic of UNFPA/MMA's intervention townships during the study period are included in the study.

3.4 Sample and Sample size

There were no studies on female clients of UNFPA/MMA-RH clinic before, data for prevalence of socio-demographic, belief, accessibility factors in ANC, delivery and PNC behaviors was difficult to obtain. Therefore, in order to calculate the sample size, the prevalence of factors related to ANC/PNC practices (P) was taken at 50%.

The sample size was calculated by the following equation:

$$n = \frac{(Z \cdot \alpha/2)^2 \cdot P \cdot (1-P)}{d^2}$$

$$n = \frac{1.96^2 \cdot (0.5)(0.5)}{0.05^2}$$

(Alpha (0.05) = Z $\alpha/2$ = 1.96)

n = sample size

P = proportion of folk belief and behaviour in population (prevalence)

Z = the reliability of coefficient (confidence level) at 95% CI = 1.96

d = absolute precision of study = 0.05 (acceptable error)

n = 384

10% attrition = 38

Total respondent = 422

The 10% attrition rate was added to sample size in order to avoid missing vital data, respondent's refusal of questionnaire, uninterested in the study and not continue the study. Some respondents drop out due to concerns over invading of privacy or variety of other reasons. (Bowling, 2009)

3.5 Sampling technique

There were many project townships of Yangon division where UNFPA/MMA-RH projects are implemented every three month. Only six townships visited by the mobile

clinic during this study period February and March are purposively chosen. Estimated numbers of clients per mobile clinic was obtained from previous RH clinic client's record list. All women attending the mobile services, meeting inclusion criteria and willing to participate were interviewed in a given day until the end of clinic. The same procedure was used every day till the sample size was reached. Out of total 422 women interviewed, 37 women were removed from analysis due to incompleteness of data. In conclusion 385 women are included in data entry to SPSS for analysis.

All female clients who visited to mobile clinics are in the criteria list for survey as follow.

Inclusion Criteria

Female clients aged between 15-49 years old of using the RH mobile clinic services.

Female clients who have given birth once at least in the past 3 years and the child has survived up to 3 months at least.

Female clients who are willing to participate in the survey are considered.

Exclusion Criteria

Female clients with mentally unsound, severe illness (eg, high fever, postpartum bleeding), hearing and speech disability.

3.6 Measurement tools

By using structured close questionnaires, survey format was developed. Interviewer administered questionnaire was used for obtaining quantitative data. The questionnaires were divided into 4 parts: Socio-demographic, Antenatal care, Delivery care and Postnatal care beliefs, accessibility to care and antenatal, delivery and postnatal care behaviors.

Validity

Questionnaires were reviewed by Content validity method, with three experts from public health field who are Dr Thwe Thwe Win, National RH programme officer, UNFPA, Myanmar, Dr Myint Zaw, Joint Executive Director, RH project, MMA, Dr Alessio Panza, former RH consultant. Questionnaires were modified according to their comments and suggestions.

Pre-test

The sample of pre-test was conducted with 40 clients from similar RH mobile clinic in Pyay, Bago Division, Myanmar before the actual survey. This was to validate the translation of key terms used, understanding of respondent on questionnaires, and sequence of those questions can solicit the desired information. Justification of questions was made according to the feedbacks from pre-test.

Those changes are made as follows:

Added in *one answer only for questionnaire B4, B10, B11, B13, B15, B17, C3.

For B10 Breastfeeding duration, category answer code 2 (0-4 months) into (0-5 months), answer code 3 (4-8 months) into (6-12 months).

For B11, Other reason category was added in as answer code 77.

Useful, Harmless, Harmful grading were re-arranged into Useful, Harmful, Harmless.

B 13 “For Useful answer above”, changed into “For Should do answer above”.

For C6 question was added in few words as “Can you afford to pay for the delivery care services?”

For D4 and D5 changed 4.6 and 5.6 as 5 times. Changed 4.7 and 5.7 as >6 times.

Added in 4.7 and 5.7 as Not remember.

Reliability

By using Cronbach’s alpha for scale reliability, the data collected from pretest was analyzed to estimate the internal consistency. The result from cronbach alpha test showed that Question no B5.1 to B5.5, B6.1 to B6.5, B7.1 to B7.3 and B12.1 to B12.6 was 0.77. Question no B14.1 to B14.14 result is 0.756 and question no B16.1 to B16.11 is 0.627. Cronbach’s alpha result for pregnancy, delivery and postnatal related belief questions with cutoff point of 0.70 is assumed which implies that 70 percent of the measured variance is reliable and 30 percent is owing to random error. (Bowling, 2009)

3.7 Data collection

Data collection methods was face to face interview with interviewer administered questionnaire type. Data were collected by principal researcher and research assistants. Six research assistants (RA) were recruited from Myanmar Medical Research Department who are working there as research assistants for research

project. Principal researcher trained them for six hours since all of them already have experience as research assistants for data collection. Training module includes explanation on research objectives, methodology, details of questionnaires, how to address to pregnant women and role play interviews in order to limit the interviewer bias. They are provided with lunch and refreshments, and training allowance.

Firstly RA approached to the participants at the end of their health visit mobile counters where they are waiting to collect medical supplies from the mobile clinic team.

Before interviewing the participants, the RA gave clear verbal explanation to each potential participant on the purposes and procedures of the study, the utilization of the results and the right not to participate to the research. The respondents who agreed to participate in the survey are required to sign in the consent form. The RA also explained that the questionnaire had to be folded and put in a locked box by the participants so that nobody could see her answers to the sensitive questions.

Mobile clinics site were usually at school classroom, at rural health centre building (RHC), community meeting hall. The questionnaires interview took place near to the mobile clinic sites, for instance, in school compound, outside RHC and community meeting hall. Place must be quite, shaded and away from other clients. RA and respondents were either on chairs or sitting on the floor or under shaded trees, but must be in the same level. The respondents were rewarded at the end of interview with household use items such as washing detergents packets.

It was researcher's responsibilities to ensure the data are accurate and complete. Data were corrected, adjusted and prepared for analysis.

3.8 Data analysis

Collected data from this study were analyzed by using descriptive and inferential statistics with SPSS software and illustration of diagram and tables by Microsoft excel sheet.

Firstly, Descriptive statistics was used to summarize, organize and simplify data of independent variables such as Socio-demographic, beliefs, Accessibility and

dependent variables by using mean, median, mode, standard deviation, frequency distribution, percentage.

Secondly, the inferential statistics, Bi variate analysis, Chi-square was used for categorical variable to test association between socio-demographic, antenatal, delivery, post natal belief, accessibility factors and dependent variables of antenatal, delivery and postnatal behaviors.

Binary logistic regression was used for dichotomous outcome and one independent variable with one dependent variable was tested to observe significant association. All variable with p value are less than <0.15 was put into consideration for multivariate logistic regression.

Multivariate Logistic regression was used in order to access and identify the relative importance of multiple independent variables and dependent variables. It can also give magnitude of effects and confidence intervals and p values for independent variable and it allow calculation of predicted level of dependent variables at specific levels of the independent variables.

For questionnaires B. Pregnancy, delivery and postnatal related belief

Correct answer means that respondents identify Useful, Harmful and Harmless beliefs correctly. Score from beliefs questions are classified into 3 levels as follow. Bloom's cut off point (Ahmed, 2007). For inferential statistical analysis, these three categories are grouped into two groups.

For Q.B.5 Belief on delivery place (should do: 1 point score for 5.3, 5.4, 5.5, shouldn't do: 1 point score for 5.1, 5.2, all other answers get 0)

min-max score= 0-5

Correct: score 4-5; Incorrect score 0-3 (for inferential statistical analysis)

For Q.B.6 Belief on wound healing of birth canal (should do: 1 point score for 6.4, 6.5, shouldn't do: 1 point score for 6.1, 6.2, 6.3, all other answers get 0) min-max score= 0-5

Correct: score 4-5; Incorrect score 0-3 (for inferential statistical analysis)

For Q.B.7 Belief on Umbilical stump healing (should do: 7.2, shouldn't do: 7.1, doesn't matter: 7.3, all other answer get 0) min-max score = 0-3

Correct: score 2-3; Incorrect score 0-1 (for inferential statistical analysis)

For Q.B.9 Belief on breastfeeding of colostrum to baby (useful: 9.1, harmful: 9.2, 9.3, all other answers get 0) min-max score = 0-3

Correct: score 2-3; Incorrect score 0-1 (for inferential statistical analysis)

Q.B.12 Postpartum beliefs (should do: 12.1, shouldn't do: 12.3, 12.4, 12.6, doesn't matter: 12.2, 12.5, all other answers get 0) min-max score =0-6

Correct: 5-6, Incorrect score: 0-4 (for inferential statistical analysis)

For Q.B.14 Beliefs on Food groups are divided into Carbohydrate, Fat, Protein and other cultural belief food groups. (Useful: 1 point score for 14.1, 14.3, 14.4, 14.5, 14.6, 14.7, 14.10, Harmful: 14.2, 14.8, 14.14.9, Harmless: 1 point score for 14.11, 14.12, 14.13 and all other answers get 0)

For Inferential statistics analysis, B.14.11 to B.14.14 was not included. The reason is B.14.11 to B14.13 was traditional food category and B14.14 was included in B16 scoring.

min- max score = 0-10, Correct: 8-10, Incorrect: 0-7

For Q.B.16 Belief during pregnancy and postnatal period (Shouldn't do: 1 point score for 16.1, 16.2, 16.3, 16.4, 16.5, Should do: point score for 16.6, 16.7, 16.8, doesn't matter: 1 point score for 16.9, 16.10, 16.11 and all other answers get 0)

For Inferential statistics analysis B.14.14 Alcohol intake was added to Q.B.16 which gives total score of 12.

min- max score =0-12, Correct score: 9-12, Incorrect score: 0-8

For questionnaires D. Antenatal, delivery and postnatal care practices

In order to identify the practices on ANC, delivery and PNC, the numbers of the clients' visits to UNFPA/MMA-RH mobile clinic or other health facilities is standardized as follows:

ANC behavior: 0 times refers to unsatisfactory ANC practice (United Nation, 2008)

1-3 times refer to satisfactory ANC practice

≥ 4 times refer to very satisfactory ANC practice

For inferential statistical analysis ANC attendance is grouped into two groups.

Unsatisfactory practice: 0-3 times, Satisfactory practice: 4 or more than 4 times

Delivery practice: Home delivery by TBA, by herself, mother, elder refer to unsatisfactory practice (Lech and Mngadi, 2005)

Home delivery by midwife refer to satisfactory practice

All institutional deliveries refer to very satisfactory practice

For inferential statistical analysis delivery practices are grouped into two groups.

Unsatisfactory practice: all home delivery, Satisfactory practice: all institutional delivery

PNC behavior: 0 time refer to unsatisfactory PNC practices

(Sines, Wall, Worley, et al., 2007)

1-5 times refers to satisfactory PNC practices

≥ 6 times refer to very satisfactory PNC practices (UNFPA, MOH, JOICFP, 2010)

(The total number of visits due at the time of survey was taken into account.)

For inferential statistical analysis PNC attendance is grouped into two groups

Unsatisfactory practice 0-5 times, Satisfactory practice: 6 or more times

**For inferential statistical analysis, beliefs variables are recoded into two groups as correct and incorrect and dependent variables as unsatisfactory and satisfactory practices.*

3.9 Ethical consideration

Approval from ethical review committee of Chulalongkorn University was obtained on 20th February, 2012, COA No. 020/2012. Under the guidance of Myanmar Medical Association (MMA) Myanmar, this study was carried out.

Interviewees were received full explanation about the study including the purpose, process and benefits of the study. (San P. W., 2007)

Informed signed consents were taken from the interviewees, considering;

- Willingness to participation
- Freedom of withdrawal
- Confidentiality

- Convenience
- Non-discrimination
- Access to final report or results of the study if desired
- Assurance of data not to use for other purpose

Every respondent with wrong beliefs was provided with health education about right beliefs and correct practices by the interviewers at the end of every interview.

3.10 Limitation

- This study was only for female clients visited to reproductive health mobile services. Therefore, it could not be generalized for all reproductive aged Myanmar women in those townships.
- Since this was interviewer's administered questionnaire, the result may be affected by interviewer's bias.
- This survey was only to measure the quantity of ANC, PNC visits behaviors of respondents. It does not measure the content of services care provided by mobile clinics for ANC, PNC.
- There could be information bias while conducting the research. For instance, wrong interpretation of information, improper assessment of naturalistic phenomenon which leads to researcher bias.

3.11 Expected Benefit and Application

Participant of this study get knowledge on the right beliefs and the wrong beliefs which were provided by RA at the end of interview. Participant of this study does not get direct benefit from this study but the results of this study could be helpful in correcting of false practices of participants in RH care. It is expected that the result of this research could be useful for the review and planning of RH education program, health promotion and IEC material development, and behavior change communication (BCC) intervention regarding ANC, delivery and PNC behaviors with negative outcomes among Myanmar reproductive age women. It could be a baseline quantitative data survey for future qualitative research. It may be used for setting policy guideline for improvement of maternal health care services. The most beneficial is for the researcher to attain MPH and also as career reference for future.

CHAPTER IV

RESULTS

Background Information of the Study Area

This research aimed to study the socio-demographic factors, explore folk beliefs in antenatal, delivery and postnatal care, and study the accessibility factors to the care in relation to the antenatal, delivery and postnatal care behaviours among female clients of reproductive health mobile services in sub-urban townships of Yangon Division, Myanmar. The study population consisted of 385 women respondents from 6 townships where mobile clinic services were taken place during February and March, 2012. Townships are Kyi Myin Dine, Dallah, Hlaing Tharyar, Inn Sein, Daw Pon, Thanlwin with 15 mobile clinic sites in total. Mobile clinic sites were at RHC, children nursery, community meeting hall and school hall. Interviews were taken place near the mobile clinic sites. Out of 385 respondents, those who requested for birth spacing was more than half of study population 243 (63.1%), ANC was at 128 (33.2%), for PNC was only 5 (1.3%) and for other services accounted to 9 (2.3%). ANC coverage of six townships in 2007 are Kyi Myin Dine (66.3%), Dallah (71.7%), Hlaing Thayar (54.6%), Inn Sein (36.8%), Daw Pon (74.9%), and Thanlyin (74.1%).

First part of this section focuses on describing socio-demographic characteristics of women, their ANC, Delivery, Postnatal care beliefs, Accessibility to care and ANC, Delivery, PNC practices. The second part focuses on the associations between independent and the dependent variables. Associations and their strength were analysed by bivariate and multivariable logistic regressions.

4.1. Descriptive analyses

4.1.1 Socio-demographic factors

Table 4 present the socio-demographic factors of the sample women. The majority of women (68.8%) were within reproductive aged group which was 20-39 years old. More than half (56.9%) of women's education was between primary and middle school level.

A massive 99% of husbands of respondents are employed whereas slightly 60% of women are housewife. General labour was the most common job category among women and their spouses. A minute percentage of farmers, teachers and merchants are included under “Other” job for spouse and women.

For the race of respondents, high percentages of respondents were Myanmar. Other ethnic group include Shan, Mon and Chinese women.

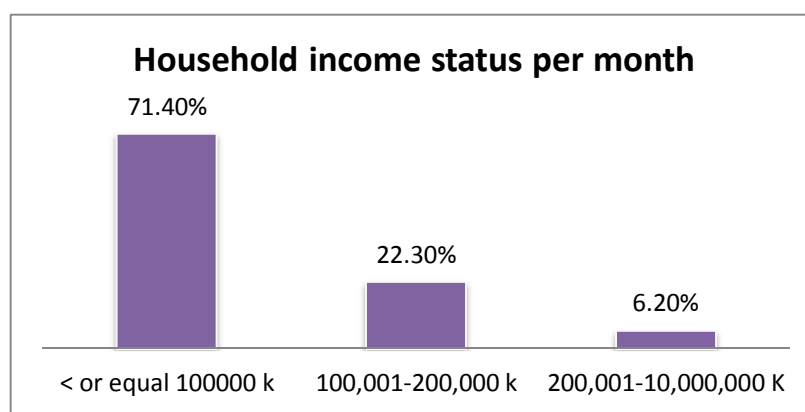
Table 4 Socio-demographic characteristics of the respondents (N=385)

Socio-demographic Characteristics	Frequency	Percentage
Age of respondents		
15-19 years	20	5.2
20-34 years	265	68.8
35-49 years	100	26.0
Mean 29.75 , Std. deviation= 7.099		
Level of Education		
Illiterate	53	13.8
Primary school (up to 4 th grade)	111	28.8
Middle school (5 th -8 th grade)	108	28.1
High School (9 th -10 th grade)	83	21.6
College/University	30	7.8
Marital Status		
Married	372	96.6
Separated/Divorced/widow	13	3.4
Occupation Status of Spouse		
General labour	210	54.5
Merchant	25	6.5
Factory worker	27	7.0
Office worker	68	17.7
Other	50	12.9
Unemployed	5	1.3
Occupation Status of Respondents		
General labour	82	21.3
Factory worker	34	8.8
Office worker	28	7.3
Other	8	2.08
Housewife	233	60.5
Race of respondents		
Myanmar	333	86.5
Indian	40	10.4
Other	12	3.1

Income status

More than half the respondents' income status was between the range of 2000-3000 kyats per day which total up to kyats 50,000-100,000 kyats monthly. Lowest income range of household income 1000-1500 kyats daily was at 15%. The currency exchange rate from US\$ to Kyats is around US\$1=820kyats.

Figure 5 Monthly household income status of women



Parity

Table 5 represents the reproductive health status of study women. A set of twin was included in the children aged group of <45 days which made up to total 386 children.

Table 5 Reproductive health characteristics of women (N=385)

Reproductive Health Characteristics	Frequency	Percentage
Parity (No of children)		
1 child	165	42.9
2-3 children	152	39.5
4-6 children	68	17.7
Age group of the last child		
< 45 days*	6	1.6
45 days -12 months	87	22.6
13- 24 months	100	26.0
25- 36 months	192	49.9
Mean=2.24, Std Deviation=0.855		

*A set of twin was included

4.1.2 Pregnancy, Delivery, Postnatal related Beliefs

Under this section, beliefs of women are divided according to the antenatal period, delivery period and postnatal period of pregnancy.

4.1.2.1 Pregnancy related beliefs

Table 6 shows ANC beliefs of women. Almost all women (99.5%) believed that antenatal care was needed for pregnancy. Regarding their belief on who should provide ANC most women (64%) provided multiple answers whilst (36%) provided one answer. More than half (52%) of respondents believed midwife was the choice of provider followed by health professional at RHC/MCH centre at 47%. A large minority of women still rely on TBA. Their beliefs for choosing those providers are mainly due to family belief and having good access. Under ‘other’ beliefs the following are the most quoted: (for “Worrying of difficult child delivery (4 %), “Good health of mother and baby” (2%), and for preference of care by trained health professionals” (1%)

Table 6 Antenatal care beliefs of respondents (N=385)

Antenatal Belief	Frequency	Percentage
Belief whether ANC is needed		
Yes	383	99.5
No	2	0.5
Belief on who should provide ANC (multiple answers)		
TBA	2	0.5
Quack	203	52.7
Midwife	228	47.3
Health professional at RHC/MCH centre	127	33.0
Doctors at UNFPA/MMA mobile clinic	128	33.2
Doctors at private clinic		
Belief for choosing that care		
Cheap	51	13.2
Good access	131	34.0
Family belief	166	43.1
Other	37	9.6

4.1.2.2 Delivery Beliefs

Table 7 shows the delivery belief of respondents. The majority of women (from 71% to 94%) answered correctly on delivery at Hospital, RHC by midwife and health professional caring for birth canal wounds (88% to 96%) and . Still a large minority has the wrong believe in self-delivery (19.5%), delivery by TBA (37%). More larger

minority (44.4%) has a wrong believe on umbilical stump care by applying traditional medicine on the cord wound.

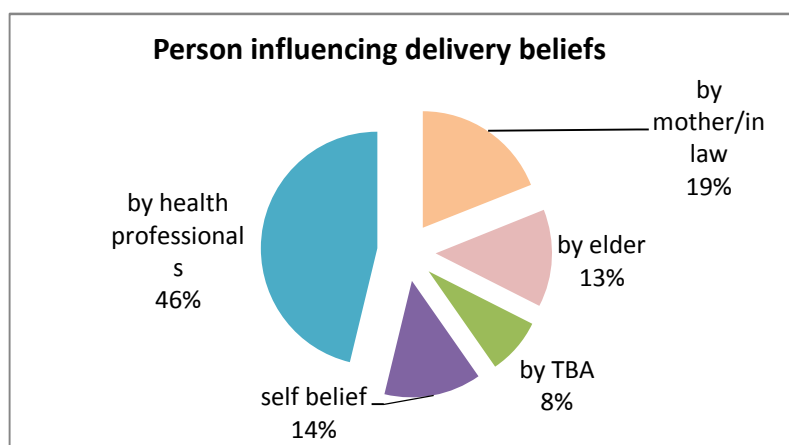
Table 7 Delivery beliefs of respondents (N=385)

Delivery Belief	Should do N (%)	Shouldn't do N (%)	Doesn't matter N (%)
<u>Belief on who should deliver the baby</u>			
Self-delivery/mother (at home)	77 (19.5)	306 (79.5%)*	4 (1.0)
TBA (at home)	144 (37.4)	233 (60.5)*	8 (2.1)
Midwife (at home)	276 (71.7)*	96 (24.9)	13 (3.4)
Health professional (at RHC centre)	331 (86.0)*	39 (10.1)	15 (3.9)
Health professional (hospital/clinic)	363 (94.3)*	10 (2.6)	12 (3.1)
<u>Belief on who should care for wound healing care of birth canal</u>			
TBA	106 (27.5)	276 (71.7)*	3 (0.8)
Mother/ in law	57 (14.8)	320 (83.1)*	8 (2.1)
Herself	30 (7.8)	344 (89.4)*	11 (2.9)
Midwife	341 (88.6)*	38 (9.9)	6 (1.6)
Health professional	373 (96.9)*	7 (1.8)	5 (1.3)
<u>Belief on umbilical stump wound care</u>			
	171 (44.4)	200 (51.9)*	14 (3.6)
by Traditional healing powder	235 (61.0)	135 (35.1)*	15 (3.9)
by Western medicines	102 (26.5)*	268 (69.6)	15 (3.9)
by not applying anything			

Note: all correct answers are stated with () at the end of number.*

The main influence for the beliefs in delivery care and practices was coming from health professionals (46%) as shown in figure 6 below.

Figure 6 Persons influencing delivery care beliefs



4.1.2.3 Postnatal related beliefs

Nearly 95% can answer correctly on colostrum is nutritious. (Table 8)

Table 8 Breastfeeding colostrum postnatal beliefs

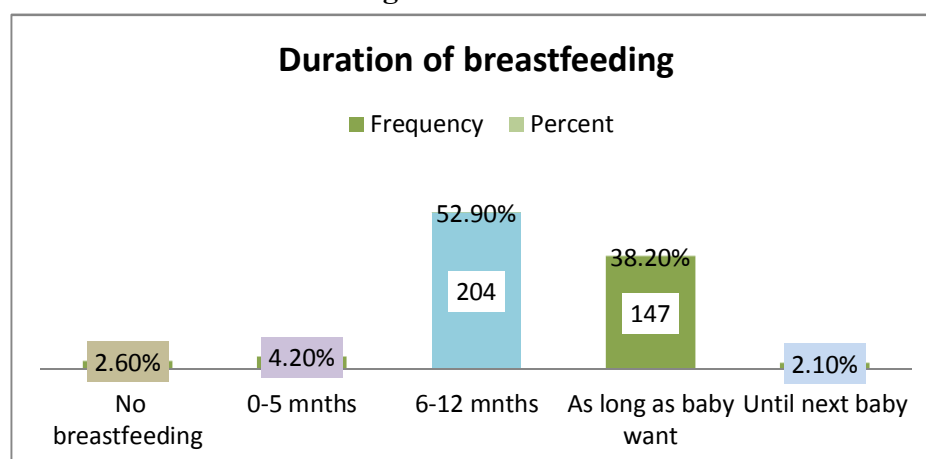
Post natal belief	Yes N (%)	No N (%)	Doesn't matter N (%)
Belief on breastfeeding colostrum to baby			
Nutritious for baby	362 (94.0)*	14 (3.6)	9 (2.3)
Unhygienic for baby	37 (9.6)	330 (85.7)*	18 (4.7)
Bad for baby and mother	24 (6.2)	338 (87.8)*	23 (6.0)

Note: All correct answers are stated with () at the end of number.*

Duration of breastfeeding belief

Finding on their belief on duration of breastfeeding revealed that more than half respondents want to breast feed up to 12 months whilst nearly 40% breastfeed as long as the baby wants. (Figure. 7)

Figure 7 Duration of breastfeeding belief



Reason for stopping of breastfeeding belief

The figure 8 represents the reason for stopping of breastfeeding belief. One third of respondents' reason was to work and another third answered the baby doesn't want it anymore. Other reasons include "they want their child to eat more/other type of food" and "worried of child tooth decay".

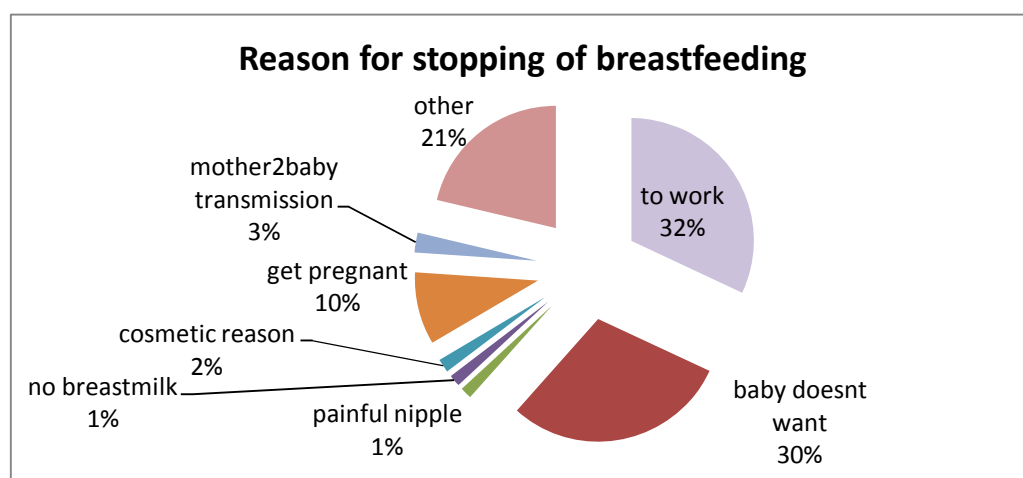
Figure 8 Reason for stopping of breastfeeding**Other postnatal beliefs**

Table 9 shows a high percentage of women have the right belief about drinking turmeric paste (83%), but a wrong belief on smearing turmeric over the mother's body (81.*%). Very high percentage of women believing in hot brick fomentation as should do belief (31.9%).

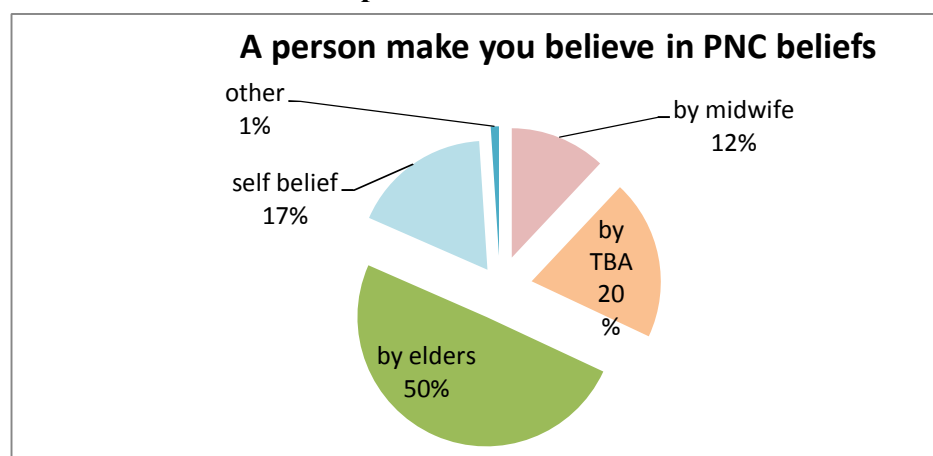
Table 9 Postnatal care beliefs (N=385)

Post natal belief	Should do N (%)	Shouldn't do N (%)	Doesn't matter N (%)
Other postpartum care belief			
Drinking turmeric paste	321 (83.4)*	55 (14.3)	9 (2.3)
Smearing turmeric to body	315 (81.8)	60 (15.6)*	10 (2.6)
Induce perspiration	248 (64.4)	127 (33.0)*	10 (2.6)
Hot brick fomentation	123 (31.9)	249 (64.7)*	13 (3.4)
Avoid exposure to wind	223 (57.9)	131 (34.0)	31 (8.1)*
Home confinement	208 (54.0)	163 (42.3)*	14 (3.6)

Note: all correct answers are stated with () at the end of number.*

A person behind those postnatal beliefs

Figure 9 represents the person who makes respondents believe in those beliefs and practices are mostly elders such as mother, mother in-law and elders in the community.

Figure 9 Persons who influence postnatal beliefs

4.1.2.4 Food intake beliefs during Pregnancy and Postnatal Period

Following table 10 illustrates food intake beliefs concerning Protein (Meat, salted dry fish, Egg, Milk), Carbohydrate (Rice, Potato), Vitamin A fruits (yellow fruits, mango, papaya), Fat (Animal fat, Palm oil, Peanut oil), Traditional food group (Hot and Spicy food, Wind food, Strong Odour food) and Alcohol. Details results are as listed below.

Table 10 Beliefs on nutrition intake during antenatal and postnatal care period

Beliefs during Antenatal and Postnatal Care Period	Useful N (%)	Harmful N (%)	Harmless N (%)
Belief on Nutritional intake			
Meat	337 (87.5)*	30 (7.8)	18 (4.7)
Salted Dry Fish	268 (69.6)	90 (23.4)*	27 (7.0)
Egg	294 (76.4)*	83 (21.6)	8 (2.1)
Milk	280 (72.7)*	90 (23.4)	15 (3.9)
Rice	382 (99.0)*	3 (0.8)	1 (0.3)
Potato	310 (80.5)*	65 (16.9)	10 (2.6)
Yellow Fruit (mango, papaya)	254 (66.0)*	117 (30.4)	14 (3.6)
Animal Fat	75 (19.5)	296 (76.9)*	14 (3.6)
Palm Oil for cooking	250 (64.9)	127 (33.0)*	8 (2.1)
Peanut Oil for cooking	344 (89.4)*	30 (7.8)	11 (2.9)
Hot and spicy food (chilli, pepper)	108 (28.1)	252 (65.5)	25 (6.5)*
Wind food (cucumber, pork, duck)	96 (24.9)	268 (69.6)	21 (5.5)*
Strong Odour Food (Danjin, Suu pote)	76 (19.7)	288 (74.8)	21 (5.5)*
Alcohol	6 (1.6)	376 (97.7)*	2 (0.5)

Note: all correct answers are stated with (*) at the end of number.

Women believed that food are harmful to fetus and mother (nearly 25%), and for delivery (6.5%). Food beliefs are influenced by elders (30.4%), mothers 24.7%, self-

belief (20.8%), traditional beliefs (8.6%) health professional (6%), TBA (2.6%) and others (0.3%).

Cultural beliefs during pregnancy and postnatal period

Results from cultural beliefs in ante- and postnatal period are stated in table 11.

Table 11 Cultural beliefs during pregnancy and postnatal period

Beliefs during Pregnancy and Postnatal Period	Should do N (%)	Shouldn't do N (%)	Doesn't matter N (%)
Cultural beliefs			
Betel chewing	42 (10.9)	335 (87.0)*	8 (2.1)
Smoking	8 (2.1)	369 (95.8)*	8 (2.1)
Not to go out of house	159 (41.3)	186 (48.3)*	40 (10.4)
Heavy work	31 (8.1)	321 (83.4)*	33 (8.6)
Wear tight clothes	12 (3.6)	337 (87.5)*	34 (8.8)
Not to wear high heels	327 (84.9)*	36 (9.4)	22 (5.7)
Sexual abstinence at late pregnancy	352 (91.4)*	15 (3.9)	18 (4.7)
Birth preparedness	370 (96.1)*	3 (0.8)	12 (3.1)
Washing hair at late hours	26 (6.8)	310 (80.5)	49 (12.7)*
Not to bargain	245 (63.6)	73 (19.0)	67 (17.4)*
Not rude word/ insult to elders	12 (3.1)	359 (93.2)	14 (3.6)*

Note: all correct answers are stated with () at the end of number.*

Beliefs on antenatal and postnatal period are influenced by elders (50.1%), oneself (24.9%), culture (21.3%), health professional (2.3%), and TBA (1.3%).

4.1.3 Accessibility

4.1.3.1 Accessibility to ANC, Delivery and PNC information and services.

Table 12 Access to care during antenatal, delivery and postnatal period (N=385)

Accessibility	Yes N (%)	No N (%)	Don't know N (%)
Access to ANC information/education programme near your home	148 (38.4)	229 (59.5)	8 (2.1)
Access to Delivery information/education programme near your home	124 (32.2)	254 (66.0)	7 (1.8)
Access to PNC information/education programme near your home	130 (33.8)	247 (64.2)	8 (2.1)
Access easily to ANC care services	353 (91.7)	32 (8.3)	0 (0)
Access easily to Delivery care services	350 (90.9)	35 (9.1)	0 (0)
Access easily to PNC care services	347 (90.1)	36 (9.4)	2 (0.5)

The reasons for not accessing to RH care were, “Too far to reach to service centres” (7.5%), “Never heard of service” (7.2%) and “Preferred home care by TBA” (2.6%) Other rarely reported reasons are too weak to go, family restriction.

4.1.3.2 Restriction during postnatal period

Findings from table 13 show that majority of women have no restriction to go out of house for regular PNC check up even though they believe in home confinement.

Table 13 Restriction during postnatal period (N=385)

Variables	Yes N (%)	No N (%)
Allow to go out of house for regular PNC	350 (90.9)	35 (9.1)

4.1.3.3 Affordability during delivery period

Findings from table 14 reveal that majority of them can afford to pay for the cost of delivery.

Table 14 Affordability during delivery period (N=385)

Variables	Yes N (%)	No N (%)
Can you afford to pay to receive the care?	334 (86.8)	51 (13.2)

4.1.3.4 Cost of delivery of last child by different service provider

In term of who deliver the women's last baby, nearly half of them answered it was at hospital by doctors and health professional (n=165, 42.9%) followed by TBA delivery at home (n=132, 34.3%), and by midwife (n=83, 21.6%). There are 5 respondents who answered home delivery by themselves or by their mother at 1.3%.

Cost of delivery varied from by whom and where they delivered the last baby which details were illustrated in the figure below. (820 kyats=1 US\$)

Table 15 Cost of delivery of last baby by different service provider

Cost (in kyats)	By Self/Mother	By TBA	By Midwife	By doctor/At hospital
Minim	0	3000	5,000	0
Mean	10,100	26,000	33,900	103,000
Maximum	20,000	250,000	200,000	1,000,000

4.1.4 Antenatal, Delivery and Postnatal practices

Following tables shows the frequency and percentage of women practices on ANC, Delivery and PNC during the present pregnancy or last pregnancy.

Table 16 Antenatal, Delivery and Postnatal care practices during the present pregnancy or last pregnancy (N=385)

	Unsatisfactory practice N(%)	Satisfactory practice N(%)	Very Satisfactory practice N(%)	Not Remember N(%)
Total ANC visit	11 (2.9)	157 (40.8)	214 (55.6)	3 (0.8)
Delivery Place	133 (34.5)	63 (16.4)	189 (49.1)	
Total PNC visit	137 (35.6)	206 (53.5)	39 (10.1)	3 (0.8)

For ANC, Unsatisfactory practice= 0 time, Satisfactory practice=1-3 times, Very satisfactory practice= \geq 4 times

For Delivery place, Unsatisfactory practice=at home (self/TBA), Satisfactory practice=at home (midwife), Very satisfactory practice=Institutional delivery

For PNC, Unsatisfactory practice= 0 time, Satisfactory practice=1-5 times, Very satisfactory practice= \geq 5times

4.2 Bi variate analysis

Chi square test was conducted to observe the relationship between different independent variables and three dependent variables. In this section, marital status was re grouped into two groups as married and separated, divorced, widow. Occupations of husband are groups as employed and unemployed. Occupations of women are grouped as employed and housewife.

Under primary level education, illiterate women are included. In higher education group, College and university level women are included. Under other race of women, Mon, Shan and Chinese women are included.

For all answers from belief questions, all the correct answers are grouped as one, similarly, incorrect answers are grouped into one group. Under who make you believe variable, health professional and self-belief are combined as one group while TBA/elders/mother are in another group.

4.2.1 Relationship between all independent variables and ANC practices

4.2.1.1 Relationship between Socio-demographic factors and ANC practices

Table 17 shows the relationship between women's socio-demographic characteristics and their antenatal practices. There is significant positive association between numbers of children and antenatal practices (p value=0.017). The result reveals that as the number of children increase, more likely to have satisfactory ANC practices for new pregnancy compared with one child mother.

For who should provide ANC belief multiple response answer, women who believed on health professional only as correct, TBA/quack only as incorrect, both health professionals and TBA/quack as incorrect.

All variables that are significantly related to ANC practices with significant p values <0.05 are starred.

Table 17 Relationship between Socio-demographic factors and ANC practices

Variable	Unsatisfactory practices N (%)	Satisfactory practices N (%)	χ^2	p value
Age group of respondents			5.181	0.075
Teenage group	13 (65.0)	7 (35.0)		
Reproductive aged group	120 (45.3)	145 (54.7)		
High risk aged group	38 (38.0)	62 (62.0)		
Level of Education			0.808	0.668
Primary (up to 4th grade)	77 (47.0)	87 (53.0)		
Middle (5th-8th grade)	45 (41.7)	63 (58.3)		
High (9th-10th grade or higher)	49 (43.4)	64 (56.6)		
Marital Status			0.016	0.898
Married	165 (44.4)	207 (55.6)		
Separated/Divorced/Widow	6 (46.2)	7 (53.8)		
No. of children			8.173	0.017*
one child	87 (52.7)	78 (47.3)		
1-3 child	57 (37.5)	95 (62.5)		
4-6 child	27 (39.7)	41 (60.3)		
Employment status of husband				#1.000
Employed	169 (44.5)	211 (55.5)		
Unemployed	2 (40.0)	3 (60.0)		
Employment status of women			3.19	0.074
Employed	112 (48.1)	121 (51.9)		
Housewife	59 (38.8)	93 (61.2)		
Income status			4.688	0.096
< 100000 kyats	131 (47.6)	144 (52.4)		
100,001-200,000 kyats	33 (38.4)	53 (61.6)		
>200,000 kyats	7 (29.2)	17(70.8)		
Race of women			2.259	0.323
Myanmar	143 (42.9)	190 (57.1)		
Indian	22 (55.0)	18 (45.0)		
Other	6 (50.0)	6 (50.0)		

Fisher exact result *p value<0.05

** p value<0.005

4.2.1.2 Relationship between pregnancy related belief and ANC practices

Table 18 Relationship between Pregnancy related beliefs and ANC practices

Variable	Unsatisfactory Practices N (%)	Satisfactory Practices N (%)	χ^2	P value
ANC belief(who should provide it)			7.176	0.007*
Correct	119 (40.6)	174 (59.4)		
Incorrect	52 (56.5)	40 (43.5)		
Belief on Nutritional intake			3.21	0.073
Correct	73 (39.7)	111 (60.3)		
Incorrect	98 (48.8)	103 (51.2)		
Cultural beliefs			1.309	0.253
Correct	68 (48.2)	73 (51.8)		
Incorrect	103 (42.2)	141 (57.8)		
Who make you believe in it				#0.737
health staff	3 (33.3)	6 (66.7)		
mother/elder/TBA/self	168 (44.7)	208 (55.3)		

Fisher exact result *p value<0.05

** p value<0.005

4.2.1.3 Relationship between accessibility and ANC practices

Table 19 Relationship between accessibility and ANC practices

Variable	Unsatisfactory Practices N (%)	Satisfactory Practices N (%)	χ^2	P value
Access to information/education programme			8.881	0.003*
Yes	44 (33.8)	86 (66.2)		
No	127 (49.8)	128 (50.2)		
Access easily to services			4.484	0.034*
Yes	149 (42.7)	200 (57.3)		
No	22 (61.1)	14 (38.9)		

*p value<0.05

4.2.2 Relationship between all independent variables and Delivery practices

4.2.2.1 Relationship between Socio-demographic factors and Delivery practices

Tables 20, 21 and 22 show the relationship between socio-demographic characteristics, belief sand accessibility with delivery practices. The p value of <0.05* and <0.005** are marked with an asterisk in every significant variables.

Table 20 Relationship between Socio-demographic factors and Delivery practices

Variable	Unsatisfactory Practices N (%)	Satisfactory Practices N (%)	χ^2	p value
Age group of respondents			0.807	0.668
Teenage group	12 (60.0)	8 (40.0)		
Reproductive aged group	135 (50.9)	130 (49.1)		
High risk aged group	49 (49.0)	51 (51.0)		
Level of Education			49.487	<0.001**
Primary (up to 4 th grade)	111 (67.7)	53 (32.3)		
Middle (5 th -8 th grade)	57 (52.8)	51 (47.2)		
High(9 th -10 th grade/College)	28 (24.8)	85 (75.2)		
Marital Status			0.122	0.727
Married	190 (51.1)	182 (48.9)		
Separated/divorced/widow	6 (46.2)	7 (53.8)		
No. of children			19.789	<0.001*
one child	72 (43.6)	93 (56.4)		
1-3 child	73 (48.0)	79 (52.0)		
4-6 child	51 (75.0)	17 (25.0)		
Employment status of husband				#0.680
Employed	194 (51.1)	186 (48.9)		
Unemployed	2 (40.0)	3 (60.0)		
Employment status of women			0.006	0.937
Employed	119 (51.1)	114 (48.9)		
Housewife	77 (50.7)	75 (49.3)		
Income status			15.203	<0.001**
≤ 100000 kyats	157 (57.1)	118 (42.9)		
100,001-200,000 kyats	32 (37.2)	54 (62.8)		
>200,000 kyats	7 (29.2)	17 (70.8)		
Race of women			14.503	0.001*
Myanmar	181 (54.4)	152 (45.6)		
Indian	9 (22.5)	31 (77.5)		
Other	6 (50.0)	6 (50.0)		

4.2.2.2 Relationship between Delivery related belief and Delivery practices

Table 21 Relationship between delivery related belief and Delivery practices

Variable	Unsatisfactory Practices N (%)	Satisfactory Practices N (%)	χ^2	p value
Belief on who should deliver			18.56	0.000**
Correct	79 (67.5)	151 (56.3)		
Incorrect	117 (43.7)	38 (32.5)		
Belief on who should care for birth canal wound			21.39	<0.001**
Correct	149 (45.8)	176 (54.2)		
Incorrect	47 (78.3)	13 (21.7)		
Belief on umbilical wound care(what)			16.5	<0.001**
Correct	38 (34.5)	72 (65.5)		
Incorrect	158 (57.5)	117 (42.5)		
Person influencing in those beliefs			47.252	<0.001**
health staff	57 (32.0)	121 (68.0)		
mother/elder/TBA/self	139 (67.1)	68 (32.9)		

4.2.2.3 Relationship between accessibility and Delivery practices

Table 22 Relationship between accessibility and Delivery practices

Variable	Unsatisfactory Practices N (%)	Satisfactory Practices N (%)	χ^2	p value
Access to information/education programme			5.81	0.016*
Yes	55 (42.3)	75 (57.7)		
No	141 (55.3)	114 (44.7)		
Access easily to services			5.459	0.019*
Yes	171 (49.0)	178 (51.0)		
No	25 (69.4)	11 (30.6)		
Can you afford for care			7.385	0.007
Yes	161 (48.2)	173 (51.8)		
No	35 (68.6)	16 (31.4)		
Cost of delivery			87.598	#<0.001**
<50,000 kyats	184 (64.3)	102 (35.7)		
50,001-150,000 kyats	10 (15.2)	56 (84.8)		
>150,000 kyats	2 (6.1)	31 (93.9)		

Fisher exact result

4.2.3 Relationship between all independent variables and PNC practices

4.2.3.1 Relationship between Socio-demographic factors and PNC practices

In table 23 results indicate that postnatal care practices were significantly related to age of women, level of her education and marital status. Under Not married status, separated, divorced and widow women are included. Under who make you believe variable, health professional and self-belief are combined as one group while TBA/elders/mother are in another group.

Table 23 Relationship between Socio-demographic factors and PNC practices

Variable	Unsatisfactory practices N (%)	Satisfactory practices N (%)	χ^2	p value
Age group of respondents				#0.037*
Teenage group	19 (95.0)	1 (5.0)		
Reproductive aged group	244 (92.1)	21 (7.9)		
High risk aged group	83 (83.0)	17 (17.0)		
Level of Education			11.316	0.003**
Primary (up to 4 th grade)	157 (95.7)	7 (4.3)		
Middle (5 th -8 th grade)	94 (87.0)	14 (13.0)		
High (9 th -10 th grade or higher)	95 (84.1)	18 (15.9)		
Marital Status				#0.033*
Married	337 (90.6)	35 (9.4)		
Separated/divorced/widown	9 (69.2)	4 (30.8)		
No. of children			5.206	0.074
one child	153 (92.7)	12 (7.3)		
1-3 child	130 (85.5)	22 (14.5)		
4-6 child	63 (92.6)	5 (7.4)		
Employment status of husband				#0.415
Employed	342 (90.0)	38 (10.0)		
Unemployed	4 (80.0)	1 (20.0)		
Employment status of women			1.55	0.213
Employed	213 (91.4)	20 (8.6)		
Housewife	133 (87.5)	19 (12.5)		

Income status			#0.303
≤ 100000 kyats	251 (91.3)	24 (8.7)	
100,001-200,000 kyats	74 (86.0)	12 (14.0)	
>200,000 kyats	21 (87.5)	3 (12.5)	
Race of women			#0.345
Myanmar	298 (89.5)	35 (10.5)	
Indian	38 (95.0)	2 (5.0)	
Other	10 (83.3)	2 (16.7)	

Fisher exact result *p value<0.05 ** p value<0.005

4.2.3.2 Relationship between postnatal related beliefs and PNC practices

Table 24 Relationship between Postnatal related beliefs and PNC practices

Variables	Unsatisfactory practices N (%)	Satisfactory practices N (%)	χ^2	p value
Colostrum breastfeeding belief			1.158	0.282
Correct	319 (90.4)	34 (9.6)		
Incorrect	27 (84.4)	5 (15.6)		
Traditional postnatal belief				#0.038*
Correct	5 (62.5)	3 (37.5)		
Incorrect	341 (90.5)	36 (9.5)		
Person influencing traditional beliefs			7.734	0.005*
health staff	36 (78.3)	10 (21.7)		
mother/elder/TBA/self	310 (91.4)	29 (8.6)		
Belief on Nutritional intake			6.196	0.013*
Correct	158 (85.9)	26 (14.1)		
Incorrect	188 (93.5)	13 (6.5)		
Cultural beliefs			0.01	0.921
Correct	127 (90.1)	14 (9.9)		
Incorrect	219 (89.8)	25 (10.2)		
Person influencing food/culture beliefs				#0.053
health staff	6 (66.7)	3 (3.33)		
mother/elder/TBA/self	340 (90.4)	36 (9.6)		

Fisher exact result *p value<0.05 ** p value<0.005

4.2.3.3 Relationship between accessibility and PNC practices

Table 25 Relationship between accessibility and PNC practices

Variables	Unsatisfactory practices N (%)	Satisfactory practices N (%)	χ^2	p value
Access to information/education programme			24.405	<0.001**
Yes	103 (79.2)	27 (20.8)		
No	243 (95.3)	12 (4.7)		
Access easily to services				#1.000
Yes	313 (89.7)	36 (10.3)		
No	33 (91.7)	3 (8.3)		
Allow to go out of house				#1.000
Yes	314 (89.7)	36 (10.3)		
No	32 (91.4)	3 (8.6)		

Fisher exact result *p value<0.05

** p value<0.005

4.3 Multi-variable logistic regression analysis

This part uses multi-variable analyses to examine all the significant independent variables in relationship with women's practices on ANC, Delivery and PNC. There were 29 independent variables with p value <0.15 associated with women practices in ANC, Delivery and PNC in bivariate (chi square) analysis. The 29 variables were as age, education, marital status, number of children, income status, race of women, who should provide antenatal belief, delivery belief, wound healing belief, umbilical stump wound care belief, person influencing delivery belief, postnatal belief, person influencing postnatal belief, food beliefs, person influencing food/culture beliefs, accessibility to information, accessibility to service, restriction to go out of house, affordability of delivery care, and, cost of delivery with 3 different dependents variables. These 29 variables have been put into a first step logistic regression model, which help to identify clearly the significant factors. As a result of the first step, 5 variables maintained significant (<0.005), 10 become significant at (0.05 or <0.07), 14 variables lost its' significant (>0.05). Those variables that maintained or become

significant at the first step were then included into the final model which is shown in following tables.

4.3.1 Logistic regression analysis between ANC 4 or more visits and all independent factors

After controlling other independent variables, there are three variables that are statistically strongly associated with ANC visits. Those variables are number of children (positive association), who should provide ANC belief (positive association), access to information (positive association) as shown in Table (26).

Table 26 Logistic regression analysis of antenatal care 4 or more visits with socio demographic factors, belief factors and accessibility factors

	B	S.E.	Sig.	OR	95.0% C.I	
					Lower	Upper
Children(Ref: 1 child)			0.001**			
Children(2-3 children)	0.795	0.240	0.001	2.214	1.384	3.542
Children(4-6 children)	0.858	0.318	0.007	2.359	1.266	4.399
Occupation of women (Ref: Employed)	0.379	0.221	0.087	1.46	0.947	2.252
Provider of ANC belief (Ref: incorrect belief)	0.801	0.259	0.002**	2.228	1.341	3.702
Access to all information (Ref: no access)	0.706	0.234	0.003**	2.026	1.282	3.203

*p value<0.05

**p value<0.005

4.3.2 Logistic regression analysis between Institutional delivery practices and all independent factors

Table 27 shows three variables still have maintained significant association with institutional delivery practices. Those variables are education of women (positive association), person influencing delivery beliefs (positive association when health professionals influence beliefs) and cost of delivery (positive association). Race of women is nearly significant association with delivery practices.

Table 27 Logistic regression analysis of institutional delivery care practices with socio demographic factors, belief factors and accessibility factors

	B	S.E.	Sig.	OR	95 % CI	
					Lower	Upper
Education of women (Ref: lowest level)			0.002**			
Education (middle level)	0.184	0.302	0.542	1.20	0.665	2.171
Education (highest level)	1.135	0.328	0.001	3.11	1.637	5.914
Children(Ref: 1 child)			0.164			
Children(2-3 children)	-0.073	0.282	0.795	0.93	0.535	1.614
Children(4-6 children)	-0.711	0.385	0.065	0.49	0.231	1.044
Race (Ref: other race)			0.059			
Race (Indian)	0.882	0.747	0.237	2.42	0.559	10.446
Race (Myanmar)	1.855	0.872	0.033	6.39	1.157	35.288
Person influencing Delivery belief (Ref: TBA, elder, others)						
Health professional	1.334	0.259	<0.001**	3.798	2.286	6.308
Last delivery expenditure (Ref: lowest group) ^(a)			<0.001**			
Middle expenditure	1.906	0.392	<0.001	6.73	3.118	14.517
Highest expenditure	3.128	0.767	<0.001	22.82	5.07	102.709

*p value<0.05

**p value<0.005

(a) Middle expenditure at last delivery 50,001-150,000 kyats and highest expenditure at last delivery >150,000 kyat compared to lowest expenditure < 50,000 kyats.

4.3.3 Logistic regression analysis between PNC 6 or more times and all independent factors

Likewise for satisfactory PNC practices as shown in table 28, there are five variables that are statistically associated with PNC practices. Those variables are age of women (positive association), education of women (positive association), postnatal beliefs, person influencing postnatal beliefs, access to information. Food belief is nearly significant association (p=0.059) with PNC practices.

Table 28 Logistic regression analysis of postnatal care 6 or more visits with socio demographic factors, belief factors and accessibility factors

	B	S.E.	Sig.	OR	95.0% C.I	
					Lower	Upper
Age women (Ref: teen age)			0.011*			
Age women (reproductive age)	0.277	1.143	0.809	1.32	0.140	12.386
Age women (>35 years age)	1.474	1.170	0.208	4.37	0.441	43.253
Education of women (Ref: lowest level)			0.029*			
Education (middle level)	1.198	0.549	0.029	3.31	1.131	9.711
Education (highest level)	1.348	0.523	0.010	3.85	1.381	10.733
Traditional Postnatal beliefs(Ref: incorrect beliefs)						
correct beliefs	2.173	0.013	0.013*	8.79	1.576	49.017
Person influencing traditional PN beliefs (Ref: TBA, elder, others) ^(a)						
Health professional	1.413	0.003	0.003**	4.11	1.62	10.42
Food belief (Ref: incorrect beliefs)	0.782	0.059	0.059	2.19	0.97	4.928
Access to information (Ref: No access)	1.647	0.000	<0.001**	5.19	2.366	11.384

*p value<0.05

**p value<0.005

(a) Health professional compared with TBA, Elders, mother/in law, self as reference group.

4.3.4 Summary of all significant variables of multivariable logistic regression

In table 29 shows the summary of nine significant variables with three dependent outcomes.

Table 29 Summary of significant independent variables with three dependent variables

	ANC practices	Delivery practices	PNC practices
Age of women	NS	NS	0.011*
Education of women	NS	0.002**	0.029*
No of children	<0.001**	NS	NS
Provider of ANC belief	0.002**	-	-
Person influence delivery belief	-	<0.001**	-
Traditional Postnatal beliefs	-	-	0.013*
Person influence postnatal belief	-	-	0.003**
Access to information	0.003**	NS	<0.001**
Delivery cost	-	<0.001**	-

*p value <0.05 **p value< 0.005 NS: Not significant “-”: Not Applicable

4.4 Informal interviews

4.4.1 Professional sectors: Informal interview with Obstetric and Gynaecologist (former First Assistant at Yangon Women general hospital, Myanmar)

The interview was conducted by researcher to inquire the knowledge gaps in professional groups and to confirm with some correct traditional beliefs. The umbilical stump wound care at hospital was usually applying Betadine liquid to umbilical wound after cutting the cord which was mainly done by nurses in all institutional delivery. Even though Drinking turmeric powder paste will enhance natural healing process of birth canal wound, re-contraction of uterus and maintaining body balance, using the raw supply on pure turmeric is questionable. We need to know the quality of turmeric powder available in Myanmar market which can be mixed with any other type of yellow powder such as brick, dust. The term Post natal visits at hospital delivery after discharge refers to 2 weeks after delivery and 45 days delivery. During the minimum stay of 2-7 days admission period, at least twice a day Post natal check is done by nurses and doctors.

4.4.2 Interview with Midwife (at RHC, Rural Kyee Myin Dine township)

Healing to umbilical stump wound is done by applying methylated spirit or betadine depending on availability at RHC and also advised about natural healing if nothing available at RHC. She was unable to provide the home delivery as she is only one health staff at RHC centre to visit to clients home. For difficult labour such as breech presentation, twin delivery, high risk pregnancy are referred to hospital where else normal vaginal delivery are conducted at RHC by using clean delivery kits provided by UNFPA/WHO.

4.4.3 Folk sector: Interview with TBA (Dallah township)

She stated that she followed all the guidelines by health professionals during health talks at township level. She advises her clients to eat enough nutrition, avoid dangerous type of food intake, estimates the duration of pregnancy, gives health education, and “rearrange the abdomen” if a woman consults them for a tight feeling in the abdomen or if the baby is in an abnormal position. proper breastfeeding care to baby, uses Clean delivery kit for home delivery, apply betadine liquid to umbilical stump, advised mother not to apply turmeric to body, immunization to baby and she can also organize to get birth certificate for new born. Not only that she will spend most of her time at new mother’s house to advise do and don’t during postnatal period such as to avoid lifting heavy weights, to avoid sex during pregnancy and up to 45 days postpartum and about possible complications to the baby.

4.4.4 Popular sector: Informal interview with women client (Dallah township)

During her pregnancy, if she insulted to elders/ her husband, then he was asked to drink Pa yate ye (chanted water) by her mother in order to remove bad karma she made. Later she found out that chanted water actually is the hand/foot cleansing water by a person who she insulted eg, husband and elders. She worried that if she didn’t drink it, something bad will happen to her and her pregnancy.

She also received ANC service by midwife at RHC, by doctors from mobile clinic for 4 times and seek help from TBA such as rearranging her abdomen. But she chose to deliver at home by TBA as RHC centre is not to her house. She preferred care given

by TBA as she can take care of her day in and day out staying at her house. She followed all postnatal beliefs such as applying turmeric to body, induced perspiration, hot brick fomentation to vaginal wound which was asked by her mother. As this is her third child, she believed she can take good care of herself and baby after home confinement period of 45 days with helps from TBA and her mother.

CHAPTER V

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Discussion on descriptive analysis

The main purpose of this study was to study ANC, Delivery and PNC practices under the influence of their socio-demographic backgrounds, their beliefs, accessibility to care of the women clients of mobile clinics in suburb Yangon townships.

5.1.1 Socio-demographic factors

The percentage of 15-49 years of age women in Yangon division is 15.7% (UNICEF, 2011). The sample population of pregnant women in this study includes 265 women (68.8%) in normal reproductive age. The women at high risk for reproductive health were 120 (31.2%). Of these 120 women, 20 were teenage pregnancies (5.2%) and 100 (26.0%) were in the age group 35-49 years. A more detailed analysis of the 100 women (26.0% in the 35-49 age group) reveals that 21 of them (21%) have a present late pregnancy, 53 had history of late pregnancy (53%) and 26 had history of normal age pregnancies (26%). All together therefore the late pregnancy in the study population is of 74 women or 19.2%.

Children born to teenage girls can face a number of problems and complications like premature birth, low birth weight which, in turn, can lead to a number of disabilities. Teenage pregnancy has nutritional, emotional and medical needs that are greater than in 20-35 years old pregnancies. Malnutrition and anemia was relatively common in Myanmar in the late nineties (most recent available data). The calorie intake reported was 80% and the protein intake 86% of the required amounts, respectively. Among adolescent girls, Anaemia was found in 26.4% cases (WHO-SEARO, 1998)

The pregnant teenagers have lot of emotional and psychological needs in particularly very important when the pregnancy is unplanned in single teenagers. Almost every woman (96.6%) in this study, however is, married regardless of their young age, and their pregnancies, therefore, less risky. Finding from Myanmar Multiple Indicator Cluster Survey (MMICS) (UNICEF, 2011), 7.4 per cent of young women aged 15-19 are currently married. The prevalence of married teenagers in this sample is lower

(5%) than the national prevalence reported by MMICS but it is similar to the 1998 prevalence in Yangon reported at 8.9% of the total deliveries (WHO-SEARO, 1998). Prevalence of early marriage indeed varies by geographic location, and is as high as 22.3 per cent in Eastern Shan state (UNICEF, 2011).

The adolescent fertility rate worldwide was estimated to be 55.3 per thousand for the 2000-2005 period, meaning that on average about 5.5% of adolescents give birth each year. Adolescent birth rates in the less developed countries are more than twice as high compared to rates in more developed countries. About 16 million adolescent girls aged 15-19 give birth each year, roughly 11% of all births worldwide. The range is from about 2% in China to 18% in Latin America and the Caribbean. (WHO, , 2008b) During this study research it was noticed that there is not particular attention to the need of teenage pregnancies and this aspect could be addressed in future RH mobile clinics.

While advances in medical care can help women over age 35 have safer pregnancies than in the past, pregnancy complications for this age group are higher than for younger women. Among these complications common are miscarriage (doubles risk compared to women of younger age), Increased risk of genetic abnormalities (25 per thousand pregnancies most commonly genetic disorder is Down syndrome), medical conditions (more likely to develop gestational diabetes and pregnancy-related high blood pressure), Pre-eclampsia, placental and bleeding problems during pregnancy, Labour Problems such as prolonged second stage labour and fetal distress (and increased need of forceps or vacuum-assisted vaginal delivery or a C-section), older women also have a higher risk of stillbirth and Multiple Births (Chen, 2011)

It is no longer unusual for women to wait until they are in their late 30s or early 40s to have their first child. For instance, by the year 2000, there is as many as 10% of all newborns in the USA were delivered by women >35 years old (Newcomb, 1991). This percentage considered high in the USA context is much lower than the one found in this study population (19%). This finding points out that the need of addressing the problem of late pregnancy among Yangon women attending the mobile ANC.

More than half of the women in the education level of primary to middle school only with 13.8% of illiteracy among the total respondents. Those who studied up to high

school at 21.6% and university level is only 7.8% in this study. In MMICS, it is also stated that girls and young women aged 15-19 are less commonly married if they have secondary or higher education, and if they live in the richest households.

Employment status of parent play important role in having good pregnancy practices. In this study, majority of husband are working as general labour where else vast majority of women are either unemployed or housewives. One study in Australia stated that women employed early in pregnancy appear to have pregnancy outcomes which are similar to those of housewives. Employed women appear to experience better mental health in pregnancy (Najman et al., 1989). But women in this study are mainly working as general labour, outcome could be differ from above study.

In this study, monthly household income status is divided into 3 groups according to poverty line of Myanmar. For the study population at suburb townships, Lowest income group is those below 100,000 kyats per month (71.4%), middle income group is between 100,000-200,000 kyats monthly (22.3%), higher income group >200,000 kyats monthly (6.23%). The actual value for poverty lines per adult equivalent per year in 2010 is 376151 which mean nearly 32,000 kyats per adult per month and for food poverty line is nearly 23,000 kyats per adult per month (UNDP, 2010). As for this study population and family size of 2 adults (married couple) and at least one child less than 3 years old require minimum 90,000 kyats per month. Therefore, monthly income of <100,000 kyats is considered as lowest income group for the family size of this study population.

5.1.2 Pregnancy related Beliefs

Almost all women (99.5%) understood ANC is needed for wellbeing of both mother and new born. Upon their belief on where they should receive ANC in this study represents nearly 76% of them preferred it from trained health professionals. It is crucial finding that early ANC help identification and management of risk conditions and birth preparedness. This figure is same as country figure where more than three-fourth (76%) of all pregnant mothers (15-49 years) received ANC from trained

personnel (WHO, 2009) The reason for choosing that ANC service is mainly due to family belief on having trust on the person, such as midwife, TBA, doctors.

5.1.3 Delivery related belief

In this study, belief on who should deliver the baby, 37.4% of women's belief on home delivery by TBA or 19.5% delivery by mother are, even though, rest of women believed on skilled birth attendant delivery. Lack of TBAs knowledge about pregnancy, delivery and post natal care is a wide spread problem in low income countries and Myanmar. Therefore the trust of Yangon women being assisted by TBA is not warranted. In addition TBAs have been found lack of knowledge in HIV and AIDS for instance in one study in India demonstrates that a majority of TBA lack basic information about HIV/AIDS and safe delivery practices. Given the ongoing shortage of skilled birth attendance in rural areas, more studies are needed to examine whether TBA should be trained and integrated into PMTCT and maternal child health programs in India. Traditional birth attendants will continue to play an important role in maternal child health in India for the foreseeable future (Madhivanan, Kumar, et al, 2010) This aspect is also very important for TBA in Myanmar due to the importance of HIV epidemic in the country with 1.5% in 2006 (NAP, 2010).

Belief on who should treat the wound of birth canal of women, women believe in care given by health professionals (96.9%) and midwife (88.6%) in contrast with small percentage of care by TBA (27.5%), mother (14.8%) or herself (7.8%). These finding are higher than other developing countries data (66%) of births are attended by skilled health personnel. Sub-Saharan Africa and South Asia, with greatest maternal mortality, also have the lowest levels of skilled birth attendance. Regional averages range from around 50% in South Asia and sub-Saharan Africa to a high of 97% in Central and Eastern Europe/Commonwealth of Independent States (WHO, 2008a).

Regarding beliefs on umbilical stump healing care of baby, only few percentage of women (26.5%) have right belief of letting it dry naturally by doing nothing. In other word, nearly 44.4% of them could rely on traditional healing powder such as say to pat gyi (traditional healing powder), turmeric powder while some 60% believe in applying western medicine such as spirit, betadine to the wound. According to the

guideline from UNFPA-RH service provider guideline, any application to umbilical stump wound was prohibited at community level in order to prevent any unwanted infection (UNFPA, MOH, JOICFP, 2010). Purchasing different and unsafe brand of spirit or betadine liquid from nearby pharmacy at household level will cause harmful side effect rather than letting it dry in natural ways. On the other hand, informal interview with OG specialist from women hospital, Yangon reveals that clinical trend at hospital delivery usually apply umbilical wound with betadine liquid after cutting the cord which could contradict with UNFPA guideline effecting bias in data analysis and the reporting. The respondents answered that they get application of betadine/spirit to umbilical wound knowledge from health professional such as midwife. Informal interview with midwife from RHC, Kyi Myin Din township stated that application of wound by betadine/ spirit depend on availability or by natural healing if any western medicine is not available. There is a big gap in understanding correct knowledge on umbilical stump healing at community.

5.1.4 Postnatal related belief

Breastfeeding colostrum to new born is considered as very important for new born health especially for wound healing of umbilical stump and develop natural immune system for new born. In this study results reveals that 94% of mother believed on colostrum breastfeeding. This result is higher than that in Yangon division which is percentage of women aged between 15-49 years with a birth in the two years preceding the survey who breast their baby within one hour of birth and within one day of birth, in Myanmar, 2009-2010 was 78.1%. (UNICEF, 2011) In contrast, one study in Sri Lanka pointed out that about 22% of mother in the study are did not breastfeed colostrum to their children which was advised by elders or their own belief to throw the dirty milk out. (De Silva, 1996) This study shows more than half of mother wants to breastfeed the baby up to 6-12 months and nearly 40% want to breastfeed as long as baby wants. In Mongolia, the proportion of infants aged 0 to 6 months fed only with breast milk was only 47%, this figure decreased to approximately 10% among baby 6-9 months. A household survey of breastfeeding practices was conducted in 1992 in Mongolia was found that 18.3 per cent of the children aged 13 – 24 months were found to have low weight-for-age compared to 4.1

per cent for infants under six months and 12.8 per cent for infants 6 -10 months. This trend is certainly related to the replacement of breast milk by less nutritious food as infants grow older. (Neupert, 1995)

Traditional postpartum care beliefs and practices which was usually practiced during first 7 days after delivery up to 45 days depend on individual beliefs such as taking turmeric (83.4%) and smearing turmeric (81.8%) most common belief among study population.

Even though drinking turmeric powder paste will enhance natural healing process of birth canal wound, re-contraction of uterus and maintaining body balance, using the raw supply on pure turmeric is questionable. We need to know the quality of turmeric powder available in Myanmar market which can be mixed with any other type of yellow powder such as brick, dust (Yangon OB/GYN Dr Naing Win, personal communication) There are 83% of women believed in drinking turmeric in this study. There are also nearly 82% of women believed in smearing turmeric to whole body part of new postnatal mother. Turmeric powder or raw turmeric root was crushed and processed into paste and applied to whole part of women body as a body lotion in order to enhance complexion, re generate of skin turgor and encourage healing. Interview with TBA stated that she did not encourage her clients to apply smearing turmeric (Informal interview with Yangon TBA) This is because yellowish colour to skin could be mistaken as sign and symptom of Jaundice and it is regarded as incorrect postnatal belief.

Another practice is induced perspiration (64.4%) by wrapping the whole body and covered the women either with mat or mosquito net in order to sweat impurities out of body which in this study stated as harmful belief because of causing hypothermia and hypoglycaemia to new mother. It is also stated as second most popular harmful practices (70.9%) during post-partum period in another study in Yangon. (Sein, 2010) Nearly 32% believe in hot brick fomentation which is harmful postnatal care because of danger of burning to the skin. It is done by heating the brick until hot which then was watered and wrapped with a towel/fabric to apply to abdomen, pubic area and birth canal like ironing on the body parts. Some women sit nearest to the heated hot brick for enhancing of birth canal healing. Interview with OG revealed that there are

several cases of burn at the labia minora, female genital organ causing scarring and difficult urination. The similar results were also revealed in study at rural Kyi Myin Dine township, Suburb Yangon showing hot fomentation (21.8%), smearing or taking turmeric (96.4%), induced perspiration (70.9%). In that finding also stated that drinking Turmeric as a beneficial effect and induced perspiration and hot fomentation as harmful effect (Sein, 2010).

54% of women in this study are believed in home confinement after delivery which was stated as harmful practice because of women restriction to visit for PNC. Confinement period varied from 7 days to 45 days depend on individual family practice.

There are only 8 women (2.1%) who have correct postnatal beliefs in this study. In other word, majority of postnatal women were believed in traditional postnatal activities. A study on “Traditional postpartum practices among Thai women” at Ubon Ratchathani hospital, in North-East part of Thailand (n=500) revealed that postpartum women 20 activities. More than 50% of women performed 11 or more of these activities. The most popular activities were sex abstinence, taking hot drinks, hot baths, food restrictions, home confinement, stop doing housework and breast massage.

Another finding from informal interview by TBA and a woman stated that rearranging the pregnant abdomen which for them is good for pregnant mother. This rearranging the abdomen practice is believed to be common, as found in a study of traditional birth practices in a rural area of Myanmar, in which 90 per cent of women interviewed stated that it was necessary to “manipulate the uterus” and “rearrange the baby” (May et al. 1997). Whether this is useful or harmful beliefs is questionable.

These practices were perpetuated by close female network (mother, mother in law, etc). Mother as well as new born health and increased breast milk production were the reason for following these activities. (Kaewsarn, 2003). Similar to above finding, person who influencing the above postnatal beliefs are elders (50%), TBA (20%) and self-belief (17%) in this study.

5.1.5 Food and cultural belief during pregnancy and postnatal period

Some women restricted eating of certain food during pregnancy and after delivery period that believed to affect both mother and new born health. Restricted food included hot and spicy food, food producing wind, strong odour food. Traditional beliefs on suitable and unsuitable food during pregnancy were revealed in a previous study carried out in rural community in central Myanmar. Avoidance of sour, spicy food, some fruits and vegetables were also reported in that study. (Chit, 2007)

This study found that positive beliefs towards pregnancy are avoidance of heavy task (83.4%), avoidance of sex at late pregnancy (91.4%), avoidance high heels (84.9%), alcohol drinking (97.7%), betel chewing (87%) and smoking (95.8%). The plausible explanation for these beliefs could be message obtained from health staff or education media.

Neutral beliefs which refrained pregnant women and newborn mothers are eating hot and spicy food (65.5%), strong odour food (74.8%), wind food (69.6%), not washing hair at night (80.5%), not to bargain during pregnancy (63.6%), not to use rude words (93.2%) and not to insult elders, husbands (93.2%). However, belief and practice of “drinking of foot or hand cleansing water” as remedy for consequence of use of obscene language and insult to elders, parents and husband is the dangerous one (informal interview with birth spacing client). This belief and practice shows inferior status of women. Although Myanmar women have not been discriminated seriously in reality, they were ideologically indoctrinated their lower status compared to men, Male dominance widely accepted in family relationships and Myanmar believes that husbands have higher spiritual plane than wives (UNICEF, 1995). Also great emphasis on respect to elders, parents and filial piety in Myanmar culture pushed the pregnant women to perform such a harmful practice.

5.1.6 Accessibility to care

Results from study population shows that around 60% of women do not have access to information on ANC, Delivery and PNC health education programme near their home. Nevertheless, majority of them can access to RH care services easily. Ministry of Health Myanmar reveals that 50% of families in Myanmar are living in less than 1 hour from health facility that offering delivery services. (MOH, 2011)

Accessibility to care in terms of restriction during postnatal period and affordability to care during delivery result show high satisfactory percentage of women who have no barrier for accessing to services. This is, however, cost of delivery is related to where they choose to deliver the baby. Delivery cost by TBA is cheapest in relate to cost by health professionals. The country data show that there are shortage of midwives, only 43% available for ANC and skilled delivery if we consider ideally 1 midwife per village. (MOH, 2011)

5.1.7 ANC, Delivery and PNC practices

From this study, ANC visit during this pregnancy or last pregnancy at least 1-3 times is regarded as satisfactory practices which accounted to 40.8% of women, ANC visit minimum 4 or more times is regarded as very satisfactory practices which amounted to 55.6% of in the study population. These figures are more than country data 2011 which is 76% of women had at least 1 ANC visit (MOH, 2011). In Nepal, the proportion of women attending antenatal care at least once during their last pregnancy rose significantly, from 79% to 98%, and the proportion making four or more antenatal care visits increased as well, from 29% to 50%. Overall, the mean number of antenatal care visits rose from 2.7 to 3.7 (Care Nepal, 2005). This study data on satisfactory ANC visits is higher than country data of Nepal.

Moreover, women who receive antenatal care at home by midwives are provided with a limited range of services such as restricted to a physical examination, including clinical screening for anaemia and pedal oedema, an abdominal examination, and advice on nutrition. Thus, women who receive antenatal care at home do not have their weight recorded, urine or haemoglobin examined and no VDRL blood test. Women receiving domiciliary care are advised to visit the antenatal care clinic in a health facility three times during the pregnancy, but it is unclear how many women do so (UNFPA/MoH, 1999). Therefore, all home ANC by midwife are considered as unsatisfactory for bivariate analysis in this study.

For very satisfactory delivery practices, nearly 50% of women had delivered their last child at institution whilst nearly 35% of women were delivered at home by TBA or them self and 16% by midwife at home. This study finding is lower than country data

(57%) delivered by health professional, higher than delivery by health professional with at least 3 PNC visits (30%). (MOH, 2011) Institutional delivery varies greatly by region. In 2007 globally an estimated 63% of all deliveries were assisted by a skilled birth attendant, but with great variation from 99% in high income countries compared to 59% in low income countries and 41% in very low income countries (WHO, 2008a).

In case of very satisfactory PNC practices, only 10% of women had PNC visit of 6 or more time whilst more than half of women received PNC 1-5 times only. Very high percentage of women who did not receive to PNC at all (35%) is studied. This finding is lower than country data of delivery by health professional with at least 3 PNC visits is 30% (MOH, 2011). Even though there is still very few study on PNC, but in the “‘Routine’ Postnatal Care,” by the Guideline Development Group in keeping with the ethos of *Changing Childbirth* was that postnatal care is not routine, but should recognise the uniqueness of each mother and baby. Therefore the guideline aims to identify the essential ‘core care’ which women and their babies should receive during the postnatal period and those who have no existing complications, the GDG recognised that all women and babies, no matter what their circumstances, would require core care.

Another study stated that although the majority of women considered postnatal care necessary (66.1%), only 36.6% of women obtained postnatal care. The most frequent reason for not obtaining postnatal care was that women did not feel sick and therefore did not need postnatal care (85%), followed by not having been told by their doctor to come back for postnatal care (15.5%) (Dhaher, et.al, 2008). Therefore, unsatisfactory PNC practices among women could be caused by miscellaneous issues.

Nevertheless, regarding how early discharge from hospital, since the 1950’s there has been controversy around the issue of whether early discharge from the postnatal ward. Evaluation of the literature on this topic is difficult. The definition of ‘early discharge’ varies considerably in different settings, ranging from 2 hours postpartum to three or four days after birth. ‘Early discharge’ may also be accompanied by a variety of co-interventions including antenatal preparation and postnatal support. (NCCPC, 2006)

5.2 Discussion on Bivariate analysis

5.2.1 Bivariate analysis between all independent factors and ANC

In this section, independent variables which have statically significant association with all dependent variables will be discussed.

Having more children (4-6) by women, there is increase in percentage of satisfactory ANC usage found in this study. Beliefs on who should provide ANC and access to ANC, Delivery, PNC information variables are also significantly associated with ANC practices. This variable stays significant in multivariable regression analysis which will be discussed under multi variable.

Having good access to ANC, Delivery and PNC services have more chance of receiving ANC visits 4 or more time (57.3%, $p= 0.003$). This figure is higher than country data of 40% of pregnant women who had 4 ANC visits. In this study show 349 women (90%) have access to ANC services regardless their number of ANC visits which is higher than country data of 80% of pregnant women with access to ANC services in a functional health facility or through outreach. (MOH, 2011). Compared with country report from Kosovo, a large part of population (60%) lives in a location that is more than 3 km away from primary healthcare institution. Access to services and other issues related to use of antenatal care services is very much lower compared with this study (90%). (UNICEF, 2009).

5.2.2 Bivariate analysis between all independent factors and Delivery practices

Level of education, Person influencing delivery beliefs and cost of delivery variables are significantly associated with Delivery practices and they remained significant in Multivariable analysis which will be discussed later.

Number of children in this study shows that as women with one child had practiced on institutional delivery (56.4%) than women with 4-6 children (25%). This is common belief among them that after easier delivery with first child, following deliveries are unnecessary to seek institutional care. It is similar with one study in Myanmar among Pa Oh women, mother with >3 children (36%) have used skilled birth attendant compared with mother of < or equal 3 children. (Htoo Htoo and

Somrongthong, 2011). Contrarily, another study in India also stating that those women with problems during previous delivery 2.61 times more likely to seek safe trained attendant delivery (OR=13.45, 95%CI=6.42, 28.22) and 3.94 time more likely to seek facility delivery ($p<0.001$). Women are more likely to get care for their first delivery than for others that follow (Bloom, Lippeveld, and Wypij, 1999)

Eventually in Myanmar, all first births should be delivered in hospital, midwives, however, report that even women are counselled to deliver in hospital, they usually choose home delivery. According to the preliminary findings of the FRHS, 95% of births were delivered by a doctor, nurse, midwife or TBA. It is unclear to what extents TBA in Myanmar have had training. Most of those TBAs interviewed in Mon State and Mandalay Division reported having received some training in the past, although the Government has generally not provided such training in the past five years. Most TBAs appear to have learned their trade from their mothers and grandmothers. (UNFPA/MoH, 1999)

Income status, there is statistically significant finding on women with less household income group who are less likely to use satisfactory ANC practices This finding is same as finding by Bloom, et.al study pointed out that economic status had an impact, especially in case of using a trained attendant for care. ($p <0.001$, 50% use of trained attendant in low income group compared with 94% use in high income group) (Bloom, Lippeveld, and Wypij, 1999). Women from higher household income status (70.8%) have institutional delivery than those from low income group (42.9%). In other word, lowest income group practiced unsatisfactory Delivery practices.

Delivery beliefs such as who should deliver the baby, who should care for birth canal wound are significantly associated with Delivery outcomes. Women who believed on health professionals have satisfactory institutional delivery. This is because under care of trained health professional, not only the medical condition of mother and baby are taken care of, emotional support during the labour, bonding between mother and new born by skin contact immediately after birth are supported. One research has shown that women handle labour better and require less analgesia if there is a loved one by

her side. It is now customary to ask the baby's father to be by the mother's side through the process (Ebrahim 1978).

In umbilical wound care belief, even though there are more respondents who answer wrongly, those with correct belief of healing the wound naturally are highly associated with practicing in safer delivery care. Correct belief on cord care by healing naturally is recommended by US Department of Health and Human Services. By natural drying for cord care which involves keeping the cord area clean and dry to minimize contamination by pathogens, without the routine application of topical agents, Discourage the routine use of the following antimicrobial topical agents: isopropyl alcohol, povidone-iodine, topical antibacterial agents, triple dye. It is also stated that in developing countries, Use of topical agents on the cord stump at delivery and during the first few days after delivery is currently being discussed and researched, and Considering of using breast milk as a substitute for other topical agents for umbilical stump care. (AWHONN 2001)

Access to information, access to services, restriction to go out of house, affordability to delivery care variables are also associated with satisfactory delivery practices. Accessibility to health education is one of the important factors that influence to women in obtaining information on maternal health care, promoting awareness, decision making and practicing maternal health care in antenatal, delivery and postnatal period. (Htoo Htoo and Somrongthong, 2011) If RH services are located at far reached from the household level, there will be delay in transportation. If women are not allowed to go out of house due to traditional belief, there will be barrier in receiving immediate care. As the cost of delivery at institution are far beyond women's affordability, seeking alternative delivery place could be possible. Ministry of Health Myanmar reported on relationship between Lack of knowledge and Health seeking behaviors that almost 60% are still delivering at home and not utilizing skilled attendance and believing in harmful practices at community and household level. (MOH, 2011)

Affordability, having said could not afford to receive delivery care and spend least amount on cost of delivery women had not used institutional delivery and they sought

for delivering at home. All the above findings are first time finding results from this study as there is any related study which was published online.

5.2.3 Bivariate analysis between all independent factors and PNC practices

Age of women, education of women, postnatal beliefs, person influencing postnatal belief and access to information variables are statistically associated with PNC practices. Those variables remain significant in multivariable analysis which will be discussed under multivariable analysis.

In Chi square analysis, marital status is significantly associated with PNC practices. This finding lost its significant in multivariable analysis which represents same result as another study in West Bank, Palestine. That study under multivariate analysis, woman's age and age at first marriage, woman's and husband's level of education, number of children and number of antenatal visits during the last pregnancy were not significantly associated with obtaining postpartum care. (Dhafer et.al, 2008).

Regarding food beliefs, even though, it is significantly associated with PNC practices, high percentage of women are not getting satisfactory PNC visit regardless of correct food intake belief (85.9%) or incorrect food intake belief (93.5%). In other word, having PNC visit is not linked to women's belief on food intake. One study showed that majority of women considered postnatal care necessary (66.1%), only 36.6% of women obtained postnatal care. The most frequent reason for not obtaining postnatal care was that women did not feel sick and therefore did not need postnatal care (85%), followed by not having been told by their doctor to come back for postnatal care (15.5%). Use of postnatal care was also higher among women who delivered at hospital, clinics. (Dhafer, et.al, 2008).

Another aspect relating to food belief showed by study in Lao, Asia, postpartum maternal food restrictions (food avoidances) are common practices, which may have important health consequences in reducing the nutritional content of breast milk, inadequate breastfeeding and weaning practices contribute to high rates of malnutrition and infant and child mortality (Barenes et al., 2007).

There are 376 women who are influenced by mother, elder and TBA for cultural beliefs. Only 9.6% of women have visited PNC for 6 or more time. Since good PNC practice is higher among women who delivered at hospital and clinics, MOH reported that the majority of deliveries are performed at home in Myanmar estimated figure in between 70 and 80% . In this study, half of deliveries were taken place at home in a condition of unable to receive PNC visit at institution satisfactorily. Many women prefer to deliver at home for several reasons, including the availability of family support and the low costs. There is a general belief that it is perfectly safe to deliver at home and therefore few women consider going to hospital. (UNFPA/MoH, 1999)

5.3 Discussion on Multi variable Logistic regression

5.3.1 Multivariable logistic regression between independent variables and 4 or more ANC visits

In multi variable analysis, the number of children (1 child as reference) has very strong statistically significant positive association with ANC 4 or more visits. Women with 2-3 children are 2.214 times more likely to have satisfactory ANC practice compared with reference group. Women with 4-6 children are 2.359 time more likely to have ANC visits than reference group. In other word, women who experienced quality ANC services from past pregnancy are satisfied the services at mobile clinic or elsewhere and they intend to visit more ANC for future pregnancy. Other study in Nigeria stated that number of children born before the last pregnancy did not show a significant association with utilization of ANC visits (Dairo, 2010).

Result from final model test show that belief on who should provide ANC is women who believe ANC provided by health professional are 2.228 time more likely to receive 4 or more time of ANC services. In other word, women who believed in health professional will seek care from the health professional. In the developing world, ANC use at least one time was 68% (WHO, 2008b). In contrast, a study in utilization of ANC services in Bangladesh revealed 44.1% (n=1123) of pregnant mother did not seek ANC (Rahman, 2008).

5.3.2 Multivariable logistic regression analysis of independent variable and 4 or more ANC visits and 6 or more PNC visits

Having good access to ANC, Delivery, PNC information are 2.026 times more chance of using ANC($p=0.003$) and 5.19 times more chance of using PNC visits ($p<0.001$) compared with reference group of women with no access. There are female who ever heard of RH messages in term of AN care (55.8%), Natal and Postnatal care (55.8%) in Myanmar based on the responses from 32083 eligible household members. (MOH, 2002). Another finding revealed that the percentage of women who ever seen and received health education materials such as pamphlets and handbooks and access to health education training was not much which in turns showed the lack of proper health information, education and communication activities in the villages. (Htoo Htoo and Somrongthong, 2011). Those finding showed only half of women population have access to RH information. Very limited information material is available which address the reproductive health concerns. Mass media represents one of the most powerful influences of all. Television spots would also reach a large adolescent audience, particularly girls who tend to spend much of their time in the home. Most people have access to television, either in their own home, or in the home of friends and relatives. Very few information materials are available which address the reproductive health concerns of young people specifically, and adolescents tend to have very limited access to formal channels of health education (UNFPA/MoH, 1999).

5.3.3 Multivariable logistic regression analysis of independent variable and institutional Delivery and PNC visits 6 or more times

Variable that maintained its' statistically significant, positively associated with delivery and postnatal practice is education of women. Middle and highest education level women are 1.20 times and 3.11 times more likely to have institutional delivery compared to women with lowest education. Middle and highest education level women are 3.31 times and 3.85 times more likely to have satisfactory PNC visit of 6 times of more compared with lowest educated women.

This finding is contrast with a study on Myanmar ethnic women where level of education of women have no significant association with intention to have skilled

birth attendants and intention to take at least one PNC visit. (Htoo Htoo & Somrongthong, 2011). Mothers with high level of education seek ANC from highly qualified professional "OG" or "MO" whereas illiterate mothers get AN care from "TBA" (MOH, 2002).

Country report shows the vast majority of pregnant women with secondary or higher education as well as women in the richest households received antenatal care. Percentages on all aspects of antenatal care increase with the education level and wealth level of women. (UNICEF, 2011) To point out the link between ANC, Delivery and PNC practices, one study revealed that higher level of ANC by women, percentage of choosing safe delivery care than lower level of ANC. (Bloom, Lippeveld, and Wypij, 1999). In another study, if the percentage of choosing the safe delivery care such as hospital is higher, the percentage of obtaining satisfactory PNC visits at hospital is higher (Dhaher, et.al, 2008).

5.3.4 Multivariable logistic regression analysis of independent variables and institutional Delivery practices

Regarding person influencing the delivery care beliefs, women who were advised by health professional are 3.798 times more likely to deliver the baby at hospital than the reference group of TBA, elders, mother, self-belief. In other word, availability of health professionals at centres where women can access is needed in term of women receiving safe delivery care. Country data in 2011 showed that there are 50% availability of trained auxillary midwives, nurses, midwives or physician around the clock. 57% of deliveries are assisted by health professionals and 30% of deliveries are assisted by health professional and clients received at least 3 PNC visits. (UNICEF 2011). To the researcher's knowledge this association has been found first time.

Expenditure on last delivery (lowest cost <50,000 kyats as reference) show strongly positive associated with delivery practices ($p < 0.001$). The women who spent the middle price range (50,000-150,000 kyats) and the highest range (>150,000 kyats) for deliveries were 6.73 times and 22.82 times more likely to get the institutional delivery than the lowest range group. In Myanmar, MCH care providers are paid, voluntarily by their clients, at different rates. For one delivery case, medical officers get

approximately 10,000 Kyats and midwives get 5,000 to 10,000 Kyats. Meanwhile, AMWs may obtain as much as 5,000 Kyats if they and midwives jointly deliver the service. Midwives also get around 500 Kyats for each antenatal care (ANC) provision. As maintained by FGD participants, these payments are voluntarily offered, either in cash or in kind, by the clients to reflect their gratitude to the providers. Furthermore, women who live in remote and villages, when travelling to seek care in MCH clinics and township hospitals, have to shoulder the costs of transportation, meals and accommodation for themselves and accompanying persons. The magnitude of these non-health care costs depends on the distance between their residences and the health premises (HITAP, 2010).

5.3.5 Multivariable logistic regression analysis of independent variable and PNC visits 6 or more times

Finding of age of women is significantly positive associated with PNC visits. The reproductive aged and late aged women have 1.32 times and 4.37 times more chance of having satisfactory PNC visit than teenage women. This finding is same as another study in West Bank, Palestine, higher use of postnatal care among high-risk women is appropriate, but some clinically dangerous conditions can also occur in low-risk women. Based on a multivariable analysis, use of postnatal care was higher among women who had experienced problems during their delivery, such as caesarean section, instrumental vaginal delivery than among women who had a spontaneous vaginal delivery. (Dhaher, et.al, 2008)

Traditional postnatal beliefs have statistically significant positive association with having satisfactory PNC visits. Those who have correct beliefs on those are 8.79 times more likely to have PNC visits than those with incorrect beliefs. Women who believe on traditional postnatal beliefs will not visit health centre for PNC. To them, unnecessary to go for PNC visits just by practicing traditional methods at home fulfilled the meaning of postnatal visit. Ozasoy and Katabi, 2008 reported that tying something around the navel was practiced among women from Turkey (92%) and Iran (99.3%) in order to assist uterus involution. A study carried out in South Eastern Turkey also revealed that tight wrapping of the abdomen was a common practice.

Application of heated brick wrapped with a cloth, lying on heated soil and avoidance of sex, putting Koran, bread or garlic under the pillows of a woman and a baby and home confinement were also expressed by women (Geckil, Sahin, and Ege, 2009). Above traditional PNC beliefs are practiced in many countries. But finding of those who believed in traditional beliefs are less chance of receiving PNC visits is the first finding from this study to the extent of researcher's knowledge.

Person influencing women for believing in postnatal beliefs variable has very strong statistically significant and positively association with postnatal practice. Women who were influenced by health professional are 4.11 times more likely to have PNC visits of 6 or more times than women influenced by TBA, elders, mother and self. To the extent of researcher's knowledge, this is also first finding from this study.

5.4 Conclusion

In general, the results from previous chapter suggest that the majority of women clients of mobile clinics in 6 suburban townships of Yangon, practice on having satisfactory ANC, Delivery and PNC. However, their practices are influenced mainly by factors such as socio-demographic characteristic, accessibility and some beliefs factors.

The results from multi variable logistic regression show that:

Socio-demographic characteristics: There is significant positive association between number of children with ANC practices, positive association of education of women with delivery and PNC practices, positive association of reproductive aged women with PNC practices.

Beliefs: There is very strong significant positive association between beliefs on who should provide ANC with ANC practices, very strong positive association of person influencing delivery belief with delivery practices, positive association of traditional postnatal beliefs with postnatal practices, very strong positive association of person influencing postnatal beliefs with postnatal practices.

Accessibility: There is very strong significant positive association between access to information with ANC and PNC practices and very strong positive association of cost of delivery care with delivery practices.

5.5 Strength and Limitation

Strength

- This is the first quantitative analytical and qualitative study that was done for beliefs and behavior in ANC, Delivery and PNC in Myanmar. It was self-design structured questionnaires on beliefs. No other quantitative analytical research relating to ANC, Delivery and PNC beliefs was published on internet to the extent of researcher's knowledge.
- Pre-testing and modification of survey questionnaire are done before data collection.
- Research team composing only female principal researcher and female research assistants has benefits of facilitating discussion and obtaining sincere responses from the respondent women.
- Triangulation Informal interview with each individual from professional, folk and popular sector was done in order to confirm the result.

Limitation

Apart from expected limitation during development of methodology, following are additional limitation during the survey period.

- The sample may have a over representation of Birth Spacing users because they had more time to stay at the mobile clinic. Birth Spacing users may be subject to more recall bias regarding their RH practices because they have to report about their RH practices that may have happened up to 3 years prior to the time of the interview.
- As the content of questionnaires on duration of breastfeeding, beliefs on exclusive breastfeeding and continue breastfeeding after weaning period were not included to make any thorough justification in data analysis.

Following are the difficulties during the data collection.

- There were some changes in scheduled dates of mobile clinic by implementing organization due to miscellaneous difficulties such as delay of funding by UNFPA, etc. Difficulties in getting sufficient numbers of RA on unscheduled mobile clinic dates, as RA are staff of Department of medical research, Myanmar.

5.6 Recommendation

Results of this study provide basis input on programme management and future research.

Recommendation at programme implementation level

- UNFPA/MMA mobile clinics should address on the teenage pregnancy in future projects. (For instance, to identify teenage pregnancy during mobile clinics and to supply with iron supplements, to provide education on proper nutritional intake and maternal reproductive health.)
- Education towards increased risk of genetic disorders (Down's syndrome) in late pregnancy should be included in health talks. Tests which are not routinely available to Myanmar community to detect chromosomal abnormalities in first trimester such as chorionic villus sampling and amniocentesis should be considered at institutional facility.
- Programme concerning before consideration of any pregnancy should be implemented. For instance, medical condition (high blood pressure, diabetes, obesity) should be controlled. Proper nutrition and diet, good prenatal care (prenatal vitamins with folic acid) before conceiving to help prevent neural tube defects, particularly Spina bifida.
- To educate women, families and health staff about normal mechanism of umbilical wound healing. More discussion and standardization of umbilical stump care between hospital procedure and international organization guidelines should be set.
- Counselling and education towards practicing on harmful traditional postnatal practices such as hot brick fomentation is required. Further counselling is needed on practising the neutral beliefs which are causing the inferiority status

of women. Less time consuming practices on neutral beliefs and allow more time on useful antenatal and postnatal practices for mother and new born should be considered.

- Future efforts should therefore focus on providing postnatal care to a larger number of all reproductive aged women.
- More studies on examine whether TBA should be trained and integrated into PMTCT and maternal child health programs should be considered.
- For strengthening of RH information education and services among vulnerable population, mass media promotion and edutainment programme should be empowered at household level.

Recommendation for future research

Future research on qualitative finding on factors related to ANC, Delivery and PNC practices is recommended.

To improve measurement tools in future quantitative study.

- The next studies should include the history of exclusive breastfeeding and continued breastfeeding after weaning period.
- The next studies should include on the content of services they received by different service providers. The next study should focus on smaller sample size is needed by using the finding from this study.
- It is important that we need more research on what are the barrier on receiving PNC visits by women.
- The future studies should modify on the development on cultural beliefs questionnaires in order to get reliability test score more than 0.70.

REFERENCES

- Ahmed, N. (2007). *Knowledge, attitude and practice of dengue fever prevention among the people in male's, Maldives*. College of Public Health, Chulalongkorn University, Thailand.
- Anonymous. (2005). *Chinese cultural beliefs related to pregnancy, birth and post partum care*. Retrieved from <http://www.hawcc.hawaii.edu/nursing/RNChinese02.html>.
- AWHONN 2007, Neonatal skin care, evidence based clinical practice guideline, second edition, Association of Women's Health, Obstetric and Neonatal Nurses Washington DC. Retrieved from <http://www.guideline.gov/content.aspx?id=24063>.
- Barennes, H. Simmala, C. et al. (2007). Postpartum traditions and nutrition practices among urban Lao women and their infants in Vientiane, Lao PDR. *Journal of Clinical Nutrition*, 1-9. Retrieved from <http://ifmt.auf.org/IMG/pdf/articlefoodtaboos.pdf>
- Blonde, B. C. (2008). Marital status and cohabitation during pregnancy relationship with social conditions, antenatal care and pregnancy outcome in France. *online publication "Journal of Paediatric and Perinatal Epidemiology, vol 2. issue 2.*
- Bloom, S. S., Lippeveld, T., and Wypij, D. (1999). *Does antenatal care make a difference to safe delivery? A study in Urban Uttar Pradesh, India*. Oxford University Press.
- Bowling, A. (2009). *Research methods in Health: investigating health and health services* (Third edition), Mc Graw Hill, USA.
- Brouwere, V. D., Tonglet, R., and Lerberghe, W. V. (1998). Strategies for reducing maternal mortality in developing countries: What can we learn from the history of the industrialized West? *Tropical Medicine and International Health*, 3, 771-782.

- Care Nepal. (2005). *Nepal's Reproductive Health for Married Adolescent Couples*. Retrieved from MDG5B_Nephttp://mdgpolicynet.undg.org/ext/MDG-Good-Practices/mdg5/MDG5B_Nepal_Reproductive_Health_for_Married_Adolescent_Couples.pdf.
- CDC. (2008). *Elevated Blood lead level among burmese refugees in United States*. Centers for disease control and prevention.
- Chen P J, M. (2011). *Later Age Pregnancy 2011 University of Maryland Medical Center (UMMC)*. USA: University of Maryland Medical Center (UMMC).
- Chit, K. K. (2007). *Cultural meanings and practices regarding pregnancy, childbirth and the role of women*. . Myanmar: thesis submitted for master degree of Psychology, Myanmar.
- Choudhury, N., and Ahmed, S. M. (2011). Maternal care practices among the ultra poor households in rural Bangladesh: a qualitative exploratory study. *BMC Pregnancy and Childbirth*.
- Dairo, M., and Owoyokun, K. (2010). *Factors affecting the utilization of antenatal care services in Ibadan, Nigeria*.
- De Silva, W. (1996). Towards safe motherhood in Sri Lanka: Knowledge, Attitudes and Practices during the period of Maternity. *The journal of family Welfare*, 41(32).p18-26.
- Dhaher, E., Mikolajczyk, R. T. et.al. (2008). Factors associated with lack of postnatal care among Palestinian women: A cross-sectional study of three clinics in the West Bank. *BMC Pregnancy and Childbirth* **8**:26, doi:10.1186/1471-2393-8-26 *BioMed Central Ltd*. Retrieved from <http://www.biomedcentral.com/1471-2393/8/26>
- Eijk, A. M., et al. (2006). *Use of antenatal care and delivery among rural women in West Kenya, community base survey*. Retrieved from <http://www.biomedcentral.com/1742-4755/3/2>.

- Eke, N. et al. (1999). Female Genital Mutilation: A Global Bug that could not cross the millennium bridge. *World Journal of Surgery* (10), 1082-1086.
- FAO. (2008). *Food and Agriculture organization of United Nations, Fats and fatty acids in human nutrition: Report on expert consultation*. pg 22-25, Rome, Italy. Retrieved from <http://www.fao.org/docrep/013/i1953e/i1953e00.pdf>
- Fernandez, E. L., and Gutherie, G. M. (1984). belief system and breast feeding among filipino urban poor. *Soc. Sci. Med. Vol. 19*, 991-995.
- Fernando, D. N. (2004). *Maternal Health: Current status and challenges*. In *health development in the south east asia region*. WHO-SEARO regional publications No:44.107-122.
- Geckil, E., Sahin, T., and Ege, E. (2009). Traditional postpartum practices of women and infants and the factors influencing such practices in South Eastern Turkey. *Midwifery*, 25, 62-71.
- Htoo Htoo, K. S., and Somrongthong, R. (2011). Factors influencing intention of maternal health care services utilization in Pa-oh ethnic group in Myanmar. *Journal Health Research* vol.25 no 3, pg 147-151.
- Kaewsarn, J. (2003). Issues and Innovations in Nursing Practices: Traditional postpartum practices among Thai women. *Journal of Advanced Nursing*, 41 (4), 358-366.
- Kleinman, L. S. (1984). Breastfeeding fertility and contraception. International Planned Parenthood Federation (IPPF), Medical Publications,. London
- Koblinsky, M., Campbell, O., and Heichelheim, J. (1999). *Policy and Practice, Organization delivery care: what works for safe motherhood?* Bulletin of the World Health Organization 77 (5):399-406.
- Kyi, H. (2006). infantile beri beri, disease of unbalanced diet, in Myanmar. *Myanmar Journal of Current Medical Practice*, Volume 10, No 3, 32-35.

- HITAP. (2010). *A feasibility study of community health initiative for maternal and child health in Myanmar*. Health intervention and technology assessment program (HITAP), Thailand.
- Lech, M., and Mngadi, P. (2005). *Swaziland's Traditional Birth Attendants Survey*. African Journal of Reproductive Health, Vol.9, No.3.
- Madhivanan, P., Kumar, B. N., et al. (2010). *Traditional birth attendants lack basic information on HIV and safe delivery practices in rural Mysore, India*. Bio Med Central Public Health, 10:570. doi:10.1186/1471-2458-10-570
- May, W., et. al. (1997). *Knowledge, Attitudes and Practices of Myanmar Women in a rural area related to Birth Traditions*. Myanmar: unpublished study.
- MOH. (2002). *Reproductive Health Baseline Community survey*. Myanmar: MoH, Department of Health Planning/UNFPA, Myanmar.
- MOH (2008). *Myanmar Country Report to The 6th ASEAN & Japan High Level Officials Meeting on Caring Societies: Healthy nest generation under the tight collaboration between health and social welfare. 8-11 Septemebr 2008 Tokyo, Japan*. Ministry of Health and Ministry of Social Welfare, Relief and Resettlement, Nay Pyi Daw - Myanmar
- MOH, (2011). Bottleneck/ Barrier Analysis: Department of Reproductive and Maternal Health. Power Point Presentation at Nay Pyi Daw, Myanmar.
- Mitchell T. (2009). *elevated blood level among children in refugee camps Mae La, Umpiem and Nupo refugee camps*. Tak Province, Thailand: Centers for disease control and prevention.
- MMA/DOH/UNFPA. (2010). Strengthening Quality RH Services for GPs, *Training manual for service provider, Myanmar* pg 40-43.
- Morgan, P. (1976). Breastfeeding: The Mystic Maternal Cult". In *New Society* (pp. 413-414).

- Morisky, D. E. (2002). *Encyclopedia. Traditional Health Beliefs, Practices*. Retrieved from <http://www.enotes.com/public-health-encyclopedia/traditional-health-beliefs-practices>.
- Muzzi, M. (2010). *UNICEF good practices in integrating birth registration into health systems (2000-2009)*. Retrieved from [http://www.unicef.org/protection/Birth_Registration_Working_Paper\(2\).pdf](http://www.unicef.org/protection/Birth_Registration_Working_Paper(2).pdf).
- Myntti, C. (1979). *Population Processes in Rural Yemen: Temporary Emigration, Breastfeeding and Contraception Studies in Family Planning*, Vol. 10, NO. 1 1/12, pp. 315-17.
- Najman J.M., Morrison J. et al. (1989). *The employment of mother and outcomes of their pregnancy*. *Public Health* (1989), 103 (3): 189-198.
- NAP. (2010). National Aids programme data in Myanmar. National Aids Programmes Retrieved from www.aidsdatahub.org/.../23703-myanmar-national-composite-polic.
- NCCPC (National Collaborating Centre for Primary Care) (2006). *Postnatal care: Routine postnatal care of women and their babies*. University of Leceister. Retrieved from <http://www.nice.org.uk/nicemedia/pdf/CG037fullguideline.pdf>
- Neupert, R. F. (1995). *Early age mortality, socio-economic development and health system in Mongolia*. *Health Transition Review* 5, 35-37.
- Newcomb, W. (1991). Reproduction in the older gravida. A literature review. . *J. Reprod. Med.*, 36, 839–845.
- Ozasoy, S., and Katabi, V. (2008). A comparison of traditional practices used in pregnancy, labour and the postpartum period among women in Turkey and Iran. *Midwifery*, 24, 291-300.
- Ebrahim, G. J (1978) Nutrition in Pregnancy and Growth of the Foetus Chapter 4 *in Practical Mother and Child Health in Developing countries*. p 93-124. Retrieved from http://www.oxfordjournals.org/our_journals/tropej/online/chapter4.pdf.

- Rahman, M. M. (2008). Rural urban differential of utilization of antenatal health care services in Bangladesh. *Health policy and development*, 6 (3), 117-125.
- San, P. W. (2007). *Prevalence and determinants of access to, perceptions on, and preference for HIV related health education among Myanmar Migrant Workers in Ranong, Thailand*. Bangkok: College of Public Health Sciences, Chulalornkong University.
- Sein, K. K. (2010). *Perceptions and Practices of reproductive health issues among ever married female youths in Kyimyindaing township, yangon division*. Yangon: University of Public Health, Myanmar.
- Shils et al. (2005). *Modern Nutrition in Health and Disease*. Lippincott Williams and Wilkins. ISBN 0-7817-4133-5.
- Shwe, T. N., Myint, T. T., Han, A. M., Thaug, A., Thwin, T., Aung, P. P., et al. (2001-2002). *Breast milk thiamin level of mothers with infant, clinically diagnosed as beri beri*. Myanmar.
- Sines, E., Wall, S., Worley, H., et al. (2007). *Postnatal Care: A Critical Opportunity to Save Mothers and Newborns*. Save the children, Population Reference Bureau, 3 USA. Retrieved from www.prb.org/pdf07/sn1_pncbrieffinal.pdf
- Stephenson, R., Bahieri, A., Clements, S., et al. (2006). *Contextual influences on the Use of Health Facilities for childbirth in Africa*. *Journal of Public Health*, vol 96, No.1.
- UNDP, (2010). *Poverty Profile, Myanmar*. Retrieved from http://www.mm.undp.org/ihlca/01_Poverty_Profile/PDFs/03%20Poverty%20Profile_Poverty%20and%20Inequality.pdf.
- UN-DPI. (1994). *Internationa conference on Population and development, summary of programme of action, chapter VII*. United Nations Department of Public Information*DPI/1618/POP--March1995. Retrieved from <http://www.un.org/ecosocodev/geninfo/population/icpd.htm#chapter7>.

- UNFPA. (2006). *Maternal and neonatal health in east and south-east Asia*. Bangkok: United Nations Population Funds. Retrieved from http://www.unfpa.org/upload/lib_pub_file/613_filename_bkmaternal.pdf
- UNFPA (2010a). *Country profiles, Technical report, total fertility rate per women aged 15-49 years*. Retrieved from www.unfpa.org/webdav/site/.../2010/CPA_Technical_Notes.pdf.
- UNFPA. (2010b). *United Nation Population Fund, promoting reproductive health*. Retrieved from [http://countryoffice.unfpa.org/myanmar/2010/01/12/1734/promoting reproductive health](http://countryoffice.unfpa.org/myanmar/2010/01/12/1734/promoting_reproductive_health).
- UNFPA/MoH (1999). *Reproductive health needs assessment in Myanmar*. Yangon. Retrieved from <http://countryoffice.unfpa.org/myanmar/?publications=1471>
- UNFPA/MOH. (2007). *Country townships health profile data*, UNFPA, Myanmar.
- UNFPA, MOH, JOICFP. (2010). *Reproductive Health Programme Information and Education for Behaviour Change Project*. Myanmar, pg 17.
- UNICEF. (1995). *Children and women in Myanmar: A situation analysis*. Multiple Indicator Cluster Survey, UNICEF Yangon, Myanmar.
- UNICEF. (2005). *United Nations Children Funds, Myanmar Reproductive Health End of Programme Community Survey*. Social Policy Planning Monitoring and Evaluation Section.
- UNICEF. (2009). *Antenatal care in Kosovo, Quality and access*. UNICEF. Retrieved from http://www.unicef.org/kosovo/Kujdesi_Antenatal_-_Anglisht%28per_Web%2902.pdf
- UNICEF. (2011). *Monitoring the situation of children and women, Myanmar Multiple Cluster Survey 2009-2010*. Myanmar: Ministry of National Planning and Economic Development, MoH, UNICEF.

- United Nation. (2008). *Millenium development goal indicators, Official sites for MDG indicators*. Retrieved from unstats.un.org/unsd/mdg/host.aspx?...indicators/officialist.ht.
- WHO. (2004). *Improving Maternal, Newborn and Child Health in South-East Asia Region: Myanmar*. World Health Organization. Retrieved from http://www.searo.who.int/linkfiles/improving_maternal_newborn_and_child_health_myanmar.pdf
- WHO. (2008a) *Proportion of births attended by a skilled attendant, 2007 updated. Factsheet 2007* World Health Organisation – Geneva. Retrieved from [http://www.who.int/reproductive-health/global_monitoring/
- WHO. (2008b). *MPS NOTES, Adolescent Pregnancy*. Volume 1, No. 1, WHO, Geneva, Switzerland. Retrieved from www.who.int/making_pregnancy_safer/...mpsnotes_2_Ir.pdf
- WHO, (2009). *Sexual and reproductive health strategic plan in 2010-2015 and proposed programme budget 2010-2011*. WHO.- Department of Reproductive Health and Research. Geneva
- WHO/UNFPA. (2003). *Technical consultation, Measuring access to reproductive health services*. WHO, Geneva Retrieved from http://whqlibdoc.who.int/hq/2005/WHO_RHR_04.11.pdf
- WHO-SEARO. (1998). *Strategies for Adolescent Health and Development South-East Asia Region. Report of an Intercountry Consultation*. New Delhi: WHO.

APPENDICES

APPENDIX A

Form of Patient/ Participant Information Sheet

Title of research project ... Factors related to antenatal, delivery and postnatal health care practices among female clients of Reproductive Health mobile services, sub-urban Yangon, Myanmar

Principal researcher's name... Ms Hlaing Htaik Hta Khin... **Position**student.....

Office addressCollage of Public Health Science , Chulalongkorn University...

Home address521/3-4 Soi Sriyuthaya 2-4, Sirayuthaya Road, Prayatai Distric, Rajthavee, Bangkok 10400.....

Telephone (office) **Telephone (home)**

Cell phone ...0826355238..... **E-mail:** ..hlainghtaikhta.k@gmail.com.....

1. You are being invited to take part in this research project. Before you decide to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and do not hesitate to ask if anything is unclear to you or if you would like to have more information.

2. This research project involves “the beliefs and practices during pregnancy, giving birth of baby and after pregnancy care among women at mobile clinics.”

3. Objectives of the projects

To study of socio-demographic factors related to pregnancy, delivery of baby and after pregnancy behaviors of women at mobile clinics.

To explore traditional beliefs, taboos and superstitions influencing pregnancy, delivery of baby and after pregnancy care of women at mobile clinics.

To study of accessibility factors related to pregnancy, delivery of baby and after pregnancy care of women at mobile clinics.

4. Details of participant

The participants are female clients (between aged 15-49 years) of UNFPA/MMA-RH mobile services in Suburban Yangon, Myanmar. Participants must be female clients who have given birth once at least in the past 3 years and the child has survived up to 3 months at least, those who are willing to participate in the survey only.

Those female clients at clinics who are mentally unsound, severe illness (eg, high fever, postpartum bleeding), hearing and speech disability are excluded from the survey.

This study needs at least 422 participants.

5. Procedure on participants

Principal researcher will train 6 Research assistants (RA) who are well trained working as part time RA for Medical Research Department, Myanmar and one medical doctor as head RA. They will receive six hours training on discussing issues in the structured face-to-face interview and technique how to approach to participants.

Before interviewing the potential participant, she will receive clear verbal explanation by research assistant on the purposes and procedures of the study, the utilization of the results and the right not to participate to the research. The respondents who agreed to participate in the survey are required to sign in the consent form.

The interview time will take about 20-30 minutes. It is interviewer administered questionnaire and all documents will be deleted when the research project is finished. Your information will be kept confidential and the presentation of research result will be in an overall picture only. In some cases, after the interview, you may be asked for some more information by the researcher/assistant researcher which might take a few more minutes.

6. Process of providing information

6.1 Researcher and assistant researchers will provide information to the potential participants.

6.2 If the potential participant is illiterate/cannot write, the researcher will explain clearly to that participant to get informed consents.

7. Use of the medical record

In order to study on the past medical record of clients, the permission to access the medical records is required which will be added in the inform consent form together with inform consent for interview.

8. Risk and Benefit

8.1. Risk: You will not be harmed by answering these questionnaires apart from the fact that it will be time consuming for women for answering the questionnaires.

8.2 Benefit: Participant of this study will get knowledge on what is the right belief and what is wrong belief, which will be provided by RA at the end of interview.

Participants of this study does not get direct benefit from this study but the results of this study will be helpful in correcting of false practices in RH care, setting policy and strategy for promoting RH care. Further research can be done depending on the data of this research.

9. Your participation in this research project is voluntary and you have the right to refuse this participation or to withdraw at any given time with no harm on you.

10. In case of any inquiry or to obtain more information, the researcher is available at all time. If the researcher has a piece of new information regarding the benefit or the risk/harm, the participant will be immediately informed.

Participants' information will be kept **confidential**. Results of the study will be reported as an overall statement with anonymity.

11. Participants will be compensated with household/kitchen use items as gifts such as, washing powder packets, soaps, napkins etc.

12. If the researcher does not treat you as stated in the patient's information sheet, you can write a report to "Dr. Khin Thidar, RH project officer, Myanmar Medical Association, No. 249, Theinbyu Rd, Yangon, Myanmar, [Tel:95-1-378863](tel:95-1-378863)(ext114) and "the Ethics Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University (ECCU). Institute Building 2, 4th Floor, Soi Chulalongkorn 62, Phyathai Rd., Bangkok 10330, Thailand, Tel: 0-2218-8147 Fax: 0-2218-8147 E-mail: eccu@chula.ac.th.

APPENDIX B

Form of Informed Consent Form

Address

Date

Code number of the participant

I who have signed here below agree to participate in this research project

Title “Factors related to antenatal, delivery and postnatal health care practices among female clients of Reproductive Health mobile services, sub-urban Yangon, Myanmar”

Principal researcher’s nameMs. Hlaing Htaik Hta Khin.....

Contact address ..521/3-4 Soi Sriyuthaya 2-4, Sirayuthaya Road, Prayatai Distric, Rajthavee, Bangkok 10400.....

Telephone0826355238.....

I have **(read or been informed)** about the rationale and objective(s) of the research project, about what I will engage in details, about the risk/ harm and the benefit of this research project. The researcher has explained to me and I **clearly understand with satisfaction.**

I willingly **agree** to participate in this research project and allow the researcher to ask a series of questions in this structured face to face interview which covers general information on socio-demographic factors of respondents, belief regarding antenatal, delivery, and postnatal care, accessibility to those care and behaviors on antenatal, delivery and postnatal care. I will also agree to allow the researcher to access to my medical records booklet which I am carrying with me.

For instance: The interview time will take about 20-30 minutes and will be done only one time. No blood will be taken.

I have **the right** to withdraw from this research project at any time at will without any clarification. This withdrawal **will not have any negative impact upon me (for instance, health care services are still provided as usual).**

The researcher has confirmed that the procedure(s) will be exactly the same as indicated in the patient’s information sheet. Any personal information will be **kept confidential.** Results of the study will be reported as an overall statement with anonymity.

If I am not treated as indicated in the patient's information sheet, I can report to the Ethics Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University (ECCU). Institute Building 2, 4 th Floor, Soi Chulalongkorn 62, Phyathai Rd., Bangkok 10330, Thailand, Tel: 0-2218-8147 Fax: 0-2218-8147 E-mail: eccu@chula.ac.th.

I have also received a copy of patient's information sheet and an informed consent form.

Signature

(.....Ms. Hlaing Htaik Hta Khin...)

Researcher

Signature

(.....)

Participant

Signature

(.....)

Witness

APPENDIX C

Questionnaires

Please tick (√) on the number of the answers by the respondents.

Your reason for visiting this mobile clinic: For ANC PNC
 Birth-spacing Other

Did you bring any previous record HBMR book? YES NO

A. Socio Demographic Data

No.	Questions and Filters	Coding categories	Skip to
A.1	How old are you?	Completed Age at survey ()yrs	
A.3	What is the highest level of school you attended up to now?	Illiterate 1 Primary (up to 4 th grade) 2 Middle (grade 5-8) 3 High School 4 College/University 5	
A.4	Are you married?	Yes 1 No 2	
A.5	How many children do you have? Note: Including baby alive up to 2 months.	1 child 1 1-3 children 2 3-6 children 3 >6 children 4	
A.6	How old is your last child?	completed age () months/years	
A.7	What is your spouse's occupation?	general labor 1 Merchant 2 Farmer 3 Factory worker 4 Teacher 5 Office worker 6 Other 7 Unemployed 8	
A.8	What is your occupation?	general labor 1 Merchant 2 Farmer 3 Factory worker 4 Teacher 5 Office worker 6 Other 7 Unemployed 8	
A.9	What is your family household income per month?	() kyats/month	
A.10	What is your Race?	Myanmar 1 Chinese 2 Indian 3 Mon 4 Kayin 5 Other 77	

	wound of baby?	medication 7.3 by doing nothing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
B.8	Who have make you to believe in doing it?	asked by mother/mother in law asked by elder asked by TBA self belief asked by trained health professional				1 2 3 4 5
Postnatal related belief						
B.9	What is your belief on breastfeeding the colostrums to your baby?	9.1 Nutritious for baby 9.2 Unhygienic for baby 9.3 Bad for baby and mother	<u>Useful</u> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<u>Harmful</u> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<u>Harmless</u> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
B.10	For how long would you believe in breastfeeding of your baby? *one answer only	no breastfeeding 0-5 months 6-12 months As long as baby wants until new baby born				1 2 3 4 5
B.11	What is your belief for stopping of breastfeeding? *one answer only	Need to work Baby does not want Nipple problem/tender breast No breast milk Cosmetic reason Conceive new pregnancy Unhealthy mother harmful for baby Other reason, please specify				1 2 3 4 5 6 7 77
B.12	Do you believe those activities are essential during postpartum period?	12.1 Taking turmeric 12.2 Smearing turmeric 12.3 Induced perspiration 12.4 Hot brick fomentation 12.5 Avoid exposure to wind 12.6 Home confinement	<u>Should do</u> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<u>Shouldn't do</u> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<u>Doesn't matter</u> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
B.13	For useful answer above, Who have you make you to believe in it? *one answer only.	Asked by Midwife Asked by TBA asked by elders (mother/in-laws) self belief other reason, please specify:				1 2 3 4 77
Beliefs during Pregnancy and Postnatal Period						

	doing it? *one answer only	self practice	5	
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C. Accessibility

No.	Questions and filters	Coding categories	Ski p to
C.1.1	Do you access ANC information/education programme near your home?	ANC : Yes No Don't know	1 2 3
C.1.2	Do you access Delivery care information/education programme near your home?	Delivery : Yes No Don't know	1 2 3
C.1.3	Do you access PNC information/education programme near your home?	PNC : Yes No Don't know	1 2 3
C.2.1	Can you easily access to ANC care services?	ANC : Yes No Don't know	1 2 3
C.2.2	Can you easily access to ANC care services?	Delivery : Yes No Don't know	1 2 3
C.1.3	Can you easily access to ANC care services?	PNC : Yes No Don't know	1 2 3
C.3	If no, why you cannot access RH services? *one answer only.	Restricted by family Too weak to go home care by TBA home care by midwife Too expensive Too far Never heard of these services	1 2 3 4 5 6 7
C.4	Are you allowed to go out of your house for regular PNC?	Yes No	1 2
C.5	If no, why ? *one answer only	Restricted by family it's unhealthy for puerperal mother to go out it is my personal belief Others, please specify	1 2 3
C.6	Can you afford to pay for the delivery care services?	Yes No	1 2
C.7	How much does it cost you to deliver a last baby? Give an answer for every expenditure you had before.	Cost with TBA: kyats Cost with midwife: kyats	

D.5	<p><i><u>For those who are not in post partum period now.</u></i> How many times did you receive for PNC in last pregnancy?</p>	5.1 0 time 5.2 1time 5.3 2 times 5.4 3 times 5.5 4 times 5.6 5 times 5.7 >6 times 5.8 Not remember	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
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APPENDIX D

Time Schedule

Research/Project Activities	Time Frame (Month) October 2011-September 2012							
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Writing thesis proposal								
Literature Review								
Consulting advisor								
Tool development for data collection								
Thesis proposal exam								
Field preparation and data collection								
Data analysis								
Report writing								
Thesis defense exam								
Submitting final thesis								

APPENDIX E

Budget

Description		Unit*Number	Estimated Budget (baths)
Activity 01: Procurement			
1.1	Procurement of printing of questionnaires	380~400 sets	1000
1.2	Procurement of purchasing voice recorder, stationery, emergency light	1~2 each	5000
Activity 02: Survey management cost			
2.1	Two visits back to Yangon, Myanmar	6500*2	13000
2.2	Advocacy with authorities	2000	2000
2.3	Meal		2000
2.4	Transportation to survey sites (car, boat rental)		12000
2.5	Daily wages to research assistants		10000
2.6	Accommodation		1000
2.7	Miscellaneous		700
Activity 03: Preparation and Completion of Thesis Paper			
3.1	Stationery		3000
3.2	Transportation		1000
	Total		50700

APPENDIX F
CURRICULUM VITAE

Name	:	Ms. Hlaing Htaik Hta Khin
Date of Birth	:	16 th January, 1971
Place of Birth	:	Myitkyina (Kachin State, Myanmar)
Education	:	M.B., B.S Graduated from University of Medicine 1, Yangon, Myanmar (1999) Certificates in hospitality management, Australian College of Tourism and Hospitality, Melbourne, Australia (2001~2002)
Work Experience	:	Medical Officer/ Executive Room division manager (Season Hotels group, Myanmar, Australia) (2002 ~2007) Medical Service provider (UNFPA/MMA- RH mobile clinics, Myanmar) (2009~2011) Health specialist (DRR, UNHabitat- Myanmar) (2010) Project Coordinator (UNFPA/MMA-RH Project, Cyclone GIRI hit areas, Rakhine State, Myanmar) (2010~2011) Community Health specialist (AMDA, Association of medical doctors in Asia, Myanmar) 2011