

Formative study to develop intervention package for main caregivers of pregnant women: Qualitative Analysis to improve continuum of care (CoC) for maternal health in rural areas of Yangon Region, Myanmar.

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Abstract-Most of the rural pregnant women practiced incomplete continuum of care in Myanmar. The support of family members is important for adherence of health care among pregnant women. This study intended to explore the perceptions, preferences and needs on continuum of maternal health care for development of health education package among family main caregivers of pregnant women in rural areas of Yangon Region. Three different focus group discussions were done with pregnant women, main care-givers and midwives respectively. Each group discussion consisted of seven to nine participants. Almost all of main caregivers and pregnant women could not mention detail about the continuum between pregnancy, delivery and after delivery. In spite of being aware of suitable place and personnel for safe delivery, pregnant women were still giving birth at home. Minimum required frequency of antenatal visits, forty-two days puerperium period and three times postnatal additional checks were not well known. Avoidance of food during pregnancy and puerperium; and application of unclean powder into umbilical stump were still present due to the influence of traditional practices. Main caregivers were aware of some danger signs in pregnancy and services given by midwives for pregnant women. Family caregivers were important for pregnant women in receiving health services, decision making and daily household chores. Midwives explored the importance of health education to caregivers of pregnant women to support for continuous and adequate maternal health care. The findings of this formative study were evident to develop the health education package for the main caregivers of pregnant women and hoped to be incorporated in improving maternal health by approaching continuum of care.

Index Term: Intervention Package, Main Caregivers, Pregnant Women, Continuum of Care (CoC), Myanmar

I.INTRODUCTION

From the start of pregnancy to the end after delivery, antenatal care (ANC) is a key for wellbeing of mothers [1, 2]. The postnatal care (PNC) also plays as a crucial role during the postnatal period for promoting health of the woman by identifying, monitoring and managing health conditions [3]. Health professional with midwifery skills can appropriately manage pregnancy related complications by early recognition of danger signs and an effective timely referral to a well-equipped facility [4]. Therefore, the dimensions of continuum of care (CoC) by World Health Organization (WHO) for maternal health emphasize on different stages of pregnancy, childbirth and postpartum; and address continuous care from home to health center and hospital [5].

In Myanmar, maternal death was related to inability to access, understand and apply health information within women and their families that influence on promotion and maintenance of good maternal health [6]. Especially women from rural areas of Myanmar were not utilizing the antenatal care and postnatal care services adequately [7-9]. Four visits of antenatal care among Myanmar women was 59% within 2015 to 2016 [10]. Being 86.1% and 41% of antenatal care coverage and institutional delivery in 2016, it is urgently needed to reach up to 90% and 80% in 2020 respectively [11].

WHO considered to develop interventions at the individuals, families and communities (IFC) level which increase awareness on need and problems related to maternal health and strengthen social support between women, men, families and communities for improving maternal health [12-14]. Based on the finding of community-based interventions and trials done in different parts of the world, involvement of family members including men and family members were essential for improving health status of pregnant women during antenatal, intrapartum and postnatal periods. Improvement of care-seeking for essential maternal health services including ANC visit, skilled birth attendance, institutional delivery and use of PNC were evidenced by interventions such as men involvement, family and community educational campaigns, group formation and counselling [15-20].

According to previous studies in Myanmar, health education package should be emphasized and extended for improving health of mother [8, 9, 21, 22]. Better understanding of the gaps in seeking care and factors contributing to the gaps are important to be pointed out for successful program implementation. In the Myanmar setting, support of family members is also important for adherence of continuous health care among pregnant women. To my knowledge, there was no previous intervention among main caregivers of pregnant women to improve completion of continuum of care for maternal health in Myanmar. By exploring the maternal health related perception, preferences and needs within pregnant women, their main caregivers and midwives, this formative study intended to develop health education package for main caregivers of pregnant women to strength their involvement and support for completion of continuum of maternal health care among women in rural areas of Yangon Region.

II.METHODOLOGY

2.1 Study area

This study was conducted in Taik Kyi township, Yangon Region where there is adequate rural setting and different classes of people with different ethnic and religious groups. Moreover, according to the health statistics of Yangon Regional Health Department, there is more than 3000 pregnant women, MMR was round about one per 1000 live births and rate of AN care for four and more times was less than 85% in Taik Kyi township during 2018.

2.2 Sampling

The qualitative study was carried out as first portion of the exploratory sequential design for development of intervention package. Purposive non-probability sampling was applied for participant selection. Selection criteria for maincare givers was those who were currently living with pregnant women under the same shelter and age of over 18 years. Pregnant women with any gestational periods who came to township hospital for seeking care from different villages under this township were selected and midwives (MW) who were currently working at RHCs and subcenters were purposively chosen. All participants were informed and invited by the help of local authorities including Township Medical Officer, Maternal and Child Health Medical Officer, Township Health Nurse and Health Assistant of study area.

2.3 Data collection

Three focus groups discussions (FGDs) were carried out including 7 pregnant women, 7 main care givers and 9 midwives respectively in each session. The FGD guideline was developed in both English and Myanmar languages and pretested in Thanlyin township of Yangon Region. The major topics in discussions included participants' socioeconomic backgrounds, perceptions on continuum of care, practices for ANC, child birth and PNC, preferred health care during pregnancy, child birth and postnatal period,

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needs and the barriers for continuum of care, role of main care giver for pregnant women for antenatal care, safe delivery and postnatal care. Suggestions from midwives on health education intervention for main caregivers were also explored. The data collection took place during February, 2020. In each FGD, purpose of conducting FGDs were explained. Written informed consent and permission to record their insights were obtained with maintenance of confidentiality and anonymity. The FGDs were held at a meeting hall of township hospital with privacy and absence of environmental disturbances. All other persons (non-participants) were requested to stay away while holding discussions. Researcher did as a moderator and note taking was done by three trained note-takers. Every participant was encouraged to involve in discussion and non-verbal cues were also recorded. About forty-five minutes to one hour was taken for each FGD. Before conclusion of each session, information obtained were confirmed with the participants and they were also allowed to add or modify the facts at the end of each FGD.

2.4 Data analysis

Data management was started from data collection to until it ended to develop main themes for intervention package. Content analysis was used and the interviewed data was analyzed manually. The researcher transcribed recordings as well as the field notes in Myanmar language and checking was done by listening of audio records repeatedly. After that, data files (transcripts) were saved as Microsoft word files in both Myanmar and English language. Coding of the data was done by three coders who did as note takers during FGDs. Then researcher reviewed and verified the codes several times in order to obtain an overall understanding of the data and then transferred into pre-categorized themes. The data was again sorted and organized into themes by taking consensus with co-investigators. After analysis, the findings were presented in the document as well as in qualitative matrix to reflect the deeper insights. For credibility of the study’s results, themes were triangulated using data collected from three different types of respondents; pregnant women, main caregivers of pregnant women and midwives. Moreover, audio records, field notes, transcripts and documented data analysis provided a research trail.

Ethical considerations

Participation in the study was voluntary and participants can withdraw from the study at any time. Each and every participant were explained about the study objectives and their signed consent forms were taken prior to the start of each discussion. The permission for audio recording was asked and privacy as well as confidentiality were assured during FGD. Ethical approval was granted by the Institutional Review Board (IRB), University of Public Health, Yangon by UPH-IRB (2020/PhD/1). It was also registered by Preliminary Registration: PLRID-00568_V3 at Myanmar Health Research Registry, Department of Medical Research, Yangon, The Republic of the Union of Myanmar.

III.RESULTS

Demographic characteristics of participants

The characteristics of the participants involved in the focus group discussions were shown in Table I.

Table I. Characteristics of participants in FGD

	<u>Main caregiver</u> (n=7)	<u>Pregnant woman</u> (n=7)	<u>Midwife</u> (n=9)
Age (year)			
20 to 25	2	4	1
26 to 30	1		1
31 to 35	2	2	1
36 to 40		1	2
41 to 45	1		1

46 to 50			1
51 to 55			2
56 to 60	1		
Sex			
Male	5		
Female	2	7	9
Level of education			
Primary	1	3	
Middle	3	1	3
High	3	2	4
Graduate		1	2
Relation to pregnant women			
Husband	5		
Mother	2		
Occupation			
Dependent/ Housewife	1	4	
Private company employee	1	1	
Labourer	2		
Seller	1	2	
Farmer	1		
Gravida			
One		2	
More than one		5	
Service (year)			
<5			2
5 to 10			3
>10			4
Level of health center			
Sub RHC			2
RHC			7

Table II. Identified themes and subthemes extracted from focus group discussion for development of health education package about continuum of care for maternal health

Themes	Subthemes
Understanding maternal health care	Awareness on continuum of care for pregnant women
	Knowledge and practices for antenatal
	Knowledge and practices for delivery
	Knowledge and practices for postnatal care
Perceived maternal nutrition	Nutritional patterns during pregnancy
	Nutritional patterns during puerperium
Notification of health problems and services	Awareness on danger signs
	Awareness on maternal health services given by midwives

Desired care for pregnant mothers	Preferred types of maternal health care
	Perceived roles of care-givers for pregnant mothers
Supporting ideas for health education package	Receiving health information within the community
	Suggestion of midwives for health education

For development of health education package for main caregivers of pregnant women, qualitative analysis of three focus group discussion with pregnant women, main caregivers of pregnant women and midwives revealed five overall themes with respective subthemes shown in table II. Each theme and subcategories were further described and illustrated by quotations.

Theme 1. Understanding maternal health care

Subtheme (1.1) Awareness on continuum of care for pregnant women

Almost all of main caregivers do not understand and perceive their role for care of pregnant women for continuum of care. Two main caregivers and two pregnant women expressed their perception on care of pregnancy as continuous contact with midwives. However, the rest of participants could not mention about the continuum between pregnancy, delivery and after delivery.

“We must take treatment and care from midwife of our village continuously till after delivery. Continuous contact with midwife is the best. We rely on Midwife.”

(57-year mother, Seller)

“For continuous care, we must consult with midwives, I understand. We must take care from midwife of our village. I have known that we must go to midwife if we suffer from any illness.”

(35-year pregnant woman, Seller)

On the other hand, midwives could explain detail about their services necessary for women during pregnancy, delivery and after delivery for continuum of care. They had desire to give continuous care for pregnant women from the start of pregnancy till after delivery.

“Pregnant women must always take AN care with us till the time of delivery and need postnatal care after delivery.”

(27-year MW from Rural Health Center, 4-years services)

Subtheme (1.2) Knowledge and Practices for antenatal care

Timing of antenatal care was mentioned differently by main caregivers and pregnant women. Three out of seven main caregivers knew to take early antenatal care but two main caregivers could not tell anything about antenatal care. One participant mentioned that they took antenatal care at about fifth month of pregnancy although they knew importance of taking care as early as possible.

Pregnant women noticed about antenatal care from both midwives and MCH handbook. Most of them took antenatal care within three to fifth month of pregnancy. Interestingly almost all of main care-givers and pregnant women could not mention about frequency of antenatal care exactly.

“AN care is taken immediately after notice on pregnancy. We follow according to the guidance of midwife. I don't know frequency exactly.”

(33-year husband, Farmer)

“I take first AN care at 2nd months. I don't know timing of AN visits exactly.”

(21-year pregnant woman, Housewife)

All midwives unsatisfied practices of antenatal care among pregnant women because of late AN care, irregular visit and receiving care from traditional birth attendant in some villages.

"I have found a woman who did not come regularly after 5 months of pregnancy for follow up care although she took first AN care early. Women from very far villages come at late period. They tell about modifying pregnancy at TBA. They usually do this practice monthly. If I ask about reason of late AN care, they reply about receiving pregnancy modification from TBA although they do not come to midwife."

(35-year MW from Rural Health Center, 7.5-years services)

Subtheme (1.3) Knowledge and practices for delivery

Almost all main caregivers knew that delivery at hospital and health center by doctors or midwives is good and safe but some from far villages preferred home delivery and some were giving birth at home till now.

"It should be delivered at hospital or health center by midwife. I had to deliver by TBA during my time. Now I have discussed with midwife for my daughter. Delivery in hospital by the doctor is the best."

(45-year mother, Dependent)

"Pregnant women must be delivered by midwives. I have a plan to consult with doctor at 8th month of pregnancy but I will deliver at home. If it is planned for home delivery, place of birth must be prepared to be clean before the time of delivery."

(30-year pregnant woman, Housewife)

Although main caregivers and pregnant women could mention about safe delivery, midwives explored their difficulties for management of pregnant women because of traditional practices. It was found that midwives had to give strong suggestion to both pregnant mothers and family caregivers for delivery at health center and clean places at home.

"Although there is labour room, women from far villages do not come and they prefer home delivery."

(36-year MW from Rural Health Center, 10-years services)

"We have to tell to prepare clean place for home delivery. Sometimes they start to search place to deliver only when we arrive to assist delivery. Although we advise to collect and prepare clean cloths, they do not prepare. Some are delivered by TBA although they took drugs from us."

(42-year MW from Rural Health Center, 22-years services)

Subtheme (1.4) Knowledge and practices for postnatal care

Regarding postnatal care, multiple pregnant women discussed based on their past experiences and women with primary gravida could not involve actively in this discussion. Three out of seven pregnant women knew to take postnatal care immediately after delivery and the rests did not mention. All main care givers did not know the importance of early postnatal care. Exact puerperium period, 42 days and recommended 4 times frequency of postnatal checks were not correctly described by both main caregivers and pregnant women.

"I think puerperium period is 7days. Postnatal care is important because we can consult for hypertension during this time."

(24-year pregnant woman, Housewife)

"Postnatal check is done according to midwife' guidance. We go follow up at one month and 45 days after delivery. But I don't know frequency of postnatal check exactly."

(45-year mother, Dependent)

Midwives worried about traditional practices after delivery because of guidance by TBA for women who delivered at home. Adding unclean powder into the umbilical stump and avoidance of food during puerperium period were still being found among rural families.

"We worry for avoidance of food during this period. If I don't go, TBA command to add unclean powder on umbilical stump, stay near pile of wood-fire and give water to baby."

(35-year MW from Rural Health Center, 7.5-years services)

Theme 2. Perceived maternal nutrition

Subtheme (2.1) Nutritional patterns during pregnancy

Although main caregivers did not have knowledge on balance diets for pregnant women, they accepted the advices of midwives to provide vegetables and fruits for pregnant women. One out of seven caregivers mentioned to avoid salty diet during pregnancy to prevent hypertension. Pregnant women had knowledge on healthy diets because of health message given by midwives. Midwives explored their given advices about healthy diets pattern for pregnant women to both pregnant women and their family caregivers.

“I don't know suitable food for pregnant women. I discuss with mother-in-law and feed more fruits. I feed watermelon by guidance of midwife to eat soul and sweet meal. I command my wife to avoid not suitable food for her but I don't know what is not fit for her.”

(30-year husband, Factory worker)

“I eat all foods I like. I avoid foods which can raise blood pressure. Elderly from home prepare fried fish, soup and little amount of vegetables for being afraid for bloating abdomen. My mother at their times also avoided food according to advice of TBA. Now midwife advice to eat all types of foods.”

(35-year pregnant woman, Seller)

“We have to tell not to avoid food. They avoid food. We have to tell the persons who prepare food for pregnant women to feed all types of food including fruits, vegetables and meat. We advise to eat peas if they are not affordable for meat. They are afraid of flatulence due to eating peas.”

(46-year MW from Sub center, 20-years services)

Subtheme (2.2) Nutritional patterns during puerperium

There were habits of food avoidance among the women during puerperium period mainly due to the influence of their elderly. Moreover, they also obeyed the customs of the family and advices of traditional birth attendants within their community.

“I have to eat only vegetables, dried fish and soup during puerperium period. I have to avoid food because of afraid of allergy. I don't eat meat too much.”

(33-year pregnant woman, Housewife)

Almost all midwives discussed with pregnant women not to avoid food after delivery because there were influence of family members. Although they gave health education about all types of food necessary for puerperium, women could not follow their advices due to traditional practices within their families. Midwives also mentioned that pregnant women liked and ate salty diets such as dried fish, fish-paste and monosodium glutamate although they suggested to avoid for prevention of hypertension.

“They avoid many types of food within one month after delivery. Pregnant women accept our advice but parents are difficult to be explained.”

(35-year MW from Rural Health Center, 7.5-years services)

“We have to suggest to avoid salty diet. Some women eat only fish-paste. We also have to tell about monosodium glutamate. But they are still eating. Some eat only dried fish and soup.”

(54-year MW from Rural Health Center, 29 years services)

Theme 3. Notification of maternal health problems and services availability

Subtheme 3.1. Awareness on danger signs

Almost all main care-givers involved in the focus group discussion were not aware of danger signs during pregnancy, delivery and after delivery. Only one respondent, mother of pregnant woman could describe about signs of toxemia in pregnancy. Interestingly,

all pregnant women could not discuss thoroughly about danger signs because of giving reasons as being first pregnancy and no experiences in previous pregnancies.

“Pregnant women must take care if there is swelling of legs. It may be toxemia of pregnancy. Another one is raised blood pressure during puerperium.”

(57-year mother, Seller)

“I don’t know danger signs because it is my first pregnancy.”

(21-year pregnant woman, Seller)

“I don’t know because I did not have such experiences in previous pregnancies.”

(35-year pregnant woman, Seller)

Subtheme 3.2. Awareness on maternal health services given by midwives

The health services expressed by midwives during focus group discussion were tetanus toxoid injection, iron and vitamin B1 supplementation during and after delivery, deworming after three months gestation and check of blood pressure for prevention of hypertension. Family caregivers told about the health services given by midwives during pregnancy and after delivery such as measurement of body weight, prescriptions of drugs and vaccination. However, iron supplementation could not be described by caregivers, apart from two persons. Moreover, they could not mention detailed about the types of drugs such as folate, vitamin B1 and deworming. Tetanus toxoid routinely given for pregnant women in Myanmar was not aware by main caregivers. Therefore, it was distinctly found that health services given by midwives were not well known by caregivers of pregnant women.

“Midwife gives some drugs and injections. But I don’t know what they are.”

(25-year husband, Manual worker)

“My daughter takes some drugs for pregnancy and has been received vaccine. I don’t know this vaccine.”

(45-year mother, Dependent)

Theme 4. Desired care for pregnant mothers

Subtheme (4.1) Preferred types of maternal health care

Both main care-givers and pregnant women depended on midwives and wanted to receive continuous health care. The worries about not receiving immediate health care from midwives for emergency conditions were found especially among participants from far villages. Because of difficulties in transportation, pregnant women preferred to home visit of midwives. One pregnant woman explored her desire to receive regular care by her family members and wanted to get health knowledges about good practices for puerperium period due to the lack of detailed explanation by midwives.

“I am worrying about absence of midwife at the time of delivery because I have decided to deliver with her.”

(30-year pregnant woman, Housewife)

“I want to get care for everything from family. They give care if they are free but not during working times. Whatever, I want usual care from them. I also want to know some good practices necessary for pregnancy and after delivery because there is no detailed explanations during health care visit.”

(35-year pregnant woman, Seller)

On the other hand, midwives mentioned the preference of pregnant women from far villages to home delivery; and late and irregular visit for maternal health care because of household chores and going outside for daily earning during pregnancy. They also discussed about the poor support of family members during receiving health care of pregnant women.

“Some pregnant women do not come to labour room because of far distance from their villages and they prefer to deliver at home.”

(36-year MW from Rural Health Center, 10 years services)

“Most family members do not come along with pregnant women during taking care and pregnant women have to come alone.”

(27-year MW from Rural Health Center, 4 years services)

Subtheme (4.2) Perceived roles of caregivers for pregnant mothers

According to Myanmar culture, most family members from rural areas take roles and responsibilities for pregnant women especially during and after delivery. In this study, majority of main caregivers showed their desire to support pregnant women for taking health care from midwives and for daily activities like food preparation. However, three husbands showed difficulties to give continuous support for their wives because of daily earning activities outside homes.

“I am main person for my wife. We are important for daily living and eating patterns of pregnant women. We must support for visit to health center.”

(31-year husband, Farmer)

“I cannot give care every time because of daily job.”

(25-year husband, Manual worker)

According to the description of pregnant women involved in focus group discussion, family members were essential for them during receiving health services, decision making and daily household chores from pregnancy to delivery and puerperium period. One pregnant woman was taking self-responsibility but she also explored the role of family members for her.

“I ask my family to deliver this pregnancy at home but they decided to deliver at hospital. During puerperium period, they take care and responsibilities for washing cloths and cooking meal. My family is important for food preparation for my baby and me. They also have to take care for me if I am ill.”

(35-year pregnant woman, Seller)

“I have to decide mostly by myself. I have to do everything by myself. But, during puerperium period, my mother cook foods for me. At the time of delivery, my husband support to go to health center because I am not dare to travel by motorcycle ridden by other persons.”

(33-year pregnant woman, Housewife)

Theme 5. Supporting ideas for health education package

Theme 5.1. Receiving health information within the community

Pregnant women got health messages about maternal health care mainly from midwives during visit and also learnt from maternal and child health hand book. Main caregivers also mentioned midwives as their main source of health information in their villages. However, one main caregiver discussed that most of them did not received detailed maternal health education from midwives. Although health information was accessible from posters in their villages, mass media like television and radio were not common sources for learning health messages. Midwives described that there was variation of interest from strong to a little on maternal health among main care-givers. They mentioned about a chance to give health information to care-givers during antenatal and post-natal visit.

“I find information in MCH handbook. It includes sign of delivery and; how and when to go hospital. Midwife tell me to come health center immediately if there is bleeding.”

(37-year pregnant woman, Factory worker)

“We get some health information from midwives about pregnancy care.”

(33-year husband, Farmer)

“Family members do not learn about pregnancy related health information regularly.”

(27-year MW from Rural Health Center, 4 years services)

Subtheme 5.2 Suggestion of midwives for health education

For health education, almost all midwives suggested to include information about proper nutrition, right practices during delivery and timing of health care. Two midwives mentioned that it was important to explain family members about pregnancy care because they were main decision makers of pregnant women in rural areas. To receive regular follow up care, checklists for family members to remind pregnant women about timing of care were recommended by a midwife.

“Family members are the main as they cook for pregnant women. If they command to avoid food, imbalance diet is not good for both mother and baby. So, we have to give health education to them.”

(46-year MW from Sub-center, 20 years services)

“Family member believes some traditional methods like application of unclean powder on umbilical stump, giving drinking water to newborn. So, it is important to give health education. I think it is necessary to call family member together with pregnant women at the start of AN care to explain about necessary health information.”

(35-year MW from Rural Health Center, 7.5 years services)

“Remarks and recording on AN book for next follow up is also important.”

(36-year MW from Rural Health Center, 10 years services)

IV.DISCUSSION

Different points of views from care-givers, pregnant women and midwives by the formative study supported to prepare health education package. Findings revealed from the discussion were considered to include in health education and checklist for main caregivers to alarm their pregnant women for receiving right health care services from health care providers.

For educational purpose, effectiveness and user's acceptance of pamphlet were shown by previous studies [23,24]. Being effectiveness of picture-based health education combined with text by previous studies [25,26,27,28] pictorials were used together with text in pamphlet for being more memorized and recall. Pamphlet was prepared in Myanmar language and pictorials were cited from Myanmar MCH handbook [29] and self-developed under guidance of Maternal and Reproductive Health Division. Health messages for care during pregnancy, delivery, after delivery and proper nutrition were prepared according to summary findings of focus groups discussions. The danger signs and health services necessary for pregnant women were referred from Myanmar MCH handbook [29].

Interventions for community participations specific to low and middle-income settings were recommended for improving ANC coverage and uptake of ANC services [30]. The health communication package among pregnant women, husbands and mother-in-law by trained community health workers in Egypt resulted in increased knowledge and utilization of ante-natal care [31]. Timing and frequency of ANC was not well known by both pregnant women and their main care-givers. Therefore, these factors were highlighted on pamphlets to be aware by main care-givers for their pregnant women. According to previous studies, community participatory approach was effective in uptake of tetanus toxoid immunization among pregnant women [32,33,34]. In FGD, majority of main caregivers could not mention the name and doses of tetanus toxoid immunization. Therefore, the information about two doses of tetanus toxoid was included in health education package.

In Myanmar, pregnant women are given health information during taking care from midwives by means of direct advices or explaining messages from MCH handbook [29,35]. However, caregivers involved in our focus group discussion were not well known about the services needed to take during pregnancy and after delivery. In spite of following with pregnant women during health care visit, they do not know detail on the purpose of drugs prescribed by midwives. Therefore, health information about importance of blood

pressure measurement, blood testing and regular taking of drugs like iron, folate, vitamins and deworming were provided in the pamphlet.

Both mothers and caregivers were poor in awareness on the timing and frequency of postnatal care and midwives mentioned some influences of TBA during postnatal period. According to another studies in Myanmar, maternal services utilization was found to be increased among women who were accompanied by their husbands [9, 36]. Moreover, receiving maternal health information was significant predictors for the husbands to accompany their wives for antenatal, delivery and postnatal care [36]. Therefore, we decided to give health message about timing and frequency of care for puerperium period reminding by checklist in the pamphlet.

Effectiveness of nutrition education to improve knowledge and changing dietary practices was evidenced by some studies [34,37,38]. During pregnancy and puerperium period, food restriction due to the influence of elderlies within families was discussed by some pregnant women and midwives in focus group discussions. Because of Myanmar culture, postnatal food restriction and avoidances were common among Myanmar women [39]. Therefore, health messages about proper nutrition including foods for energy yielding, body building and defense as well as unsuitable diets such as salty meals for antenatal and postnatal period were incorporated by pictorials in the pamphlets.

In the health education intervention by pictorial booklets to couples from Pakistan resulted in improvement of taking health services for problems during pregnancy and immediately after delivery; and significant increase of hospital deliveries [34]. Health education intervention by health talks reinforced with wall mounted posters and hand bills in Nigeria showed that there was improvement of knowledge about danger signs and utilization of health facility delivery services among pregnant women [40]. The majority of participants: both main care-givers and pregnant women involved in our formative study were not aware of danger signs during pregnancy, delivery and puerperium period. Because of this finding, we planned to educate main care-givers about danger signs by both text and pictorials in pamphlet. Midwives involved in the discussion suggested to provide health messages about improper traditional methods like unhygienic habits during and after delivery. Therefore, information to receive safe delivery by skilled attendant, proper place of delivery and clean delivery practices were consisted in health education. To sum up, the main areas of health education messages incorporated in pamphlet were presented in the Table III.

Table III. Health education messages about continuum of maternal health care incorporated in the pamphlet

Topics	Health messages
Antenatal care	As early as possible from skilled health personnel Importance for receiving 8 times of antenatal care
Intra-natal care	Safe delivery by skilled attendant at health facility Clean delivery place, clean hand, instrument and cloths
Postnatal care	Within 24 hours after birth followed by three additional checks
Dangers signs	Signs during pregnancy, delivery and puerperium To consult with skilled health personnel at health facilities immediately
Health services	To measure Blood pressure; testing blood; two times of Tetanus Toxoid; deworming after 4th month of pregnancy; Iron, Folate and Vitamin B1 and Vitamin A supplementation
Healthy lifestyle	Daily light exercise; enough sleep; to avoid heavy weight lifting, smoking, drinking alcohol, betel chewing and environmental pollution like indoor air pollution
Nutrition	Balance taking of three food groups for energy yielding, body building and body defense Importance to avoid salty diets like fish-paste, salted fish, monosodium glutamate

By this study, dependency of pregnant women on their family members during delivery and puerperium period were explored. Similar to other studies in Myanmar, it was found that most caregivers had key role for decision making and taking care of pregnant women [9,36,41] According to the discussion of both pregnant women and main caregivers, midwives were most reliable health care providers for maternal health in rural areas. Therefore, we developed health education package for main caregivers of pregnant women by training of assigning midwives in the intervention areas. To sum up, the prioritized messages described in the package were timing and frequency of antenatal and post-natal care, safe delivery, skilled attendants, danger signs, proper nutrition, ways of living and drugs necessary from pregnancy to puerperium.

V. CONCLUSION

According to the nature of the study and conducting in only rural areas of Yangon region, there were some limitations in generalizability. Intervention package was prepared based on the subjective findings of participants and direct observation could not be done. However, the study results came from the analysis of views, experiences and discussion of pregnant women, main caregivers of pregnant women and midwives from local rural community. There was being involvement of principle investigator from preparation of qualitative guideline to translation of findings. The findings from the focus group discussions were strongly evident to develop the health education package for the main caregivers of pregnant women. The pamphlet as the health education material could be prepared in Myanmar languages together with pictorials. Moreover, the type of health educator chosen for the intervention package was easily accessible and available by local community. The developed intervention package based on the results of exploratory design was hoped to be incorporated in improving maternal health by the approach to complete continuum of care.

VI. Acknowledgement

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VII. References

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CONFLICT OF INTEREST: Authors declare no conflicts of interest

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