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Abstract

Background: In Nepal childbirth is one of the most vulnerable periods of a woman's life and knowledge about the normal birth process, as well as danger signs, could be a life-saving intervention. Antenatal care programmes are therefore particularly relevant in Nepal where women deliver on their own in rural areas as well as in facility and hospital settings.

Aim: This study aimed to describe the relevant content and structure of a culturally tailored antenatal care programme in Nepal to be developed from the input of healthcare providers.

Methods: Qualitative semi-structured interviews with 26 health care providers were analyzed using Elo and Kyngäs' content analysis. This study received ethical approval from the research ethics committee at Dalarna University, Sweden, and the Nepal Health Research Council.

Findings: The results present possible (1) content and (2) structure of a culturally tailored antenatal care programme. Content is comprised of (a) how pregnancy affects the mother and how her lifestyle affects the unborn child; (b) normal childbirth, complications, and preparations; and (c) postpartum period – parenthood, childcare, and breastfeeding. Structure is related to (a) programme leader and location; (b) participants; and (c) pedagogy.

Conclusion: This antenatal care programme will be culturally tailored to empower women with self-confidence and their decision-making power may increase in the family system regarding their own and their children's health and wellbeing.

Clinical Application: This study can help those designing culturally sensitive antenatal care programs in Nepal.

Keywords: *Antenatal care program, Empowerment, Nepal, Culturally designed*

Introduction

Maternal and child health outcomes globally are linked to improving utilization of skilled health personnel providing care during childbirth, specifically skilled birth attendants (SBA). The World Health Organization (WHO) has therefore suggested Antenatal Care (ANC) in group settings as an intervention to motivate family members to come together to learn about normal pregnancy, childbirth, and the postpartum period, as well as learning about danger signs, which, in turn, should promote the uptake of SBA.¹ A recent systematic review established that parents from different parts of the world appreciated such lectures and courses. The partners and their families desired greater involvement in the pregnancy and appreciated the information about their roles and responsibilities in supporting the pregnant women and unborn/newborn babies.²

There are nearly 30 million people in Nepal with about 80% living in remote areas where it is still common for women to deliver at home without an SBA.³⁻⁴ Some 84% of pregnant women in Nepal received ANC from health care providers, 57% give birth in a health facility, while 41% give birth at home.⁵ The maternal mortality ratio (MMR) in Nepal is currently 239 deaths per 100,000 live births.⁶ The goal is to reduce this rate to 70 in 100,000 live births by the year 2030.⁷ To reach this target it is necessary to understand the value lay people attach to ANC and facility-based births and of health care providers involvement when giving birth. Culturally, in Nepal, pregnant women are seen as unclean from about the sixth month of pregnancy until a cleansing ritual takes place a number of days after birth. This perception may be an obstacle for women to participate in pregnancy-related check-ups since family members tend to keep them isolated at home.⁸ Another reason why women do not receive antenatal check-ups or have facility-based births is that the family does not see the need; hence, mothers have no one to accompany them or lack transportation to care,⁹ and decisions are often made for women about maternity care by their family.¹⁰

In the Nepali family structure, the mother-in-law in the extended family often holds a powerful position and makes many household decisions. The mother-in-law guides the management of childbearing within the family since she has experienced pregnancy and birth herself. The level of education of the mother-in-law and the pregnant couple has a significant correlation to knowledge and attitudes towards all issues related to reproductive health.¹⁰ Educational level varies widely in Nepal between and within urban and rural areas as well as depending on someone's socioeconomic status and caste. Twenty-five percent of women and 37% of men have a School Level Certificate while 31% of women and 11% of men are illiterate.⁵ A study about reproductive knowledge showed limited awareness among men and women of how a fetus grows inside a woman's womb, about the childbearing-, birth and postnatal periods, care of the child, and contraceptives.¹¹ Another study described that parents-to-be had difficulties fully understanding advice and caring actions of SBAs and after the birth of the child they wished they had been more attentive to verbal or written information during pregnancy. Instead, they had listened to birth stories from relatives;¹² although some men and women had searched for information online rather than trusting information from SBAs.¹³ Women participating in a trial in Nepal showed a high acceptance and positive attitudes towards attending group ANC and found it a source of learning, social support, and empowerment.¹⁴ Sessions during ANC visits are "a window" where knowledge (e.g. dangersigns in pregnancy) and attitudes towards seeking care, (e.g. giving birth accompanied by a SBA at a health facility) can be conveyed to women and their family.¹⁰ Due to the traditional family structure,¹⁵ and a woman's lack of decision making power,¹⁰ it is important to develop culturally tailored ANC to reach both expectant parents and their extended families with information that would benefit women in the perinatal period. The aim of this study was therefore to describe relevant content and structure of a culturally tailored ANC programme in Nepal, to be developed from the input of healthcare providers. In this paper "health care providers" and "SBAs" are used exchangeable.

Methods

Design

Individual semi-structured interviews were conducted with healthcare providers speaking freely on their suggestions of content and structure for a culturally tailored ANC intervention based on their own professional experiences.¹⁶

Ethical considerations

This study received ethical approval from the research ethics committee at Dalarna University, Sweden (HDA dnr: 7.1-2018/1032) and the Nepal Health Research Council, NHRC (Ref.: 2083). All participants received information (oral and written) about voluntary participation and confidentiality. Written consent was obtained for all in English or Nepali.

Setting and Participants

The interviews were conducted during December 2018 and January 2019 in health facilities in urban and rural areas of Nepal. A total of 26 interviews were held with 11 nurse-midwives, 12 nurses, one medical doctor without specialization, and two obstetricians with an average service of 14 years of clinical experience. The inclusion criteria were: knowledge of English, or access to a translator, and a minimum of three months of experience in maternal care. A translator was used in seven interviews.

Data Collection

The healthcare providers were recruited through convenience and snowball sampling where participants recommended other participants to participate.¹⁶ The interviews were conducted by the first author in a quiet room. The interviews were recorded and took 60-90 minutes and the recorded material was transcribed verbatim before analysis. The interview guide consisted of 11 open ended questions with follow-up questions covering the content and structure of a planned education intervention related to pregnancy, childbirth, and postpartum dimensions such as:

- Pregnancy – how it affects the mother and how her lifestyle affects the unborn child.
- Childbirth – normal childbirth, complications, and preparations.
- Postpartum – parenthood, childcare, and breastfeeding.
- Structure suitable in Nepal - relevant structure for local classes.

Data Analysis

The data analysis followed Elo and Kyngäs' technique for coding.¹⁷ First, all transcripts were read to identify information corresponding to the aim of this study. During the second phase, the organizing phase, smaller units were coded. These small units were condensed with longer sentences reduced to their essence. Then codes with similar meanings were organized into groups. The codes were then interpreted and collapsed into sub-categories, in the so-called abstraction process when new meaning is created based on the condensed data (see Table 1 for an example). The next abstraction level was when the subcategories were sorted into groups to

generate generic categories. The final step was to create main categories out of the generic categories, which are reported in the results section.

Table 1. Example of content analysis applied in this study

Interviewee	Meaning unit	Condensed meaning unit (code)	Sub-category	Generic category	Main category
Doctor	They should know that giving birth to a child in a hospital is important. Because at home there is no one skilled to help them.	Information about the importance of having trained staff to attend childbirth and why.	Safe delivery	Birth preparedness	Childbirth

Findings

The results centered around two main categories: [1] content and [2] structure of a culturally tailored ANC programme. Content was comprised of elements including (a) how pregnancy affects the mother and how her lifestyle affects the unborn child; (b) normal childbirth, complications, and preparations; and (c) postpartum period – parenthood, childcare, and breastfeeding. Structure was related to: (a) programme leader and location; (b) participants; and (c) pedagogies.

1. PROGRAMME CONTENT

Pregnancy

Benefits of antenatal check-ups and knowledge about danger signs

Information regarding the importance of antenatal check-ups and what to expect from individual counseling was considered valuable to build an understanding in expectant parents on why to go for ANC. Topics such as supplements, vaccination programmes, and ultrasound were suggested. The education should promote the normal processes of pregnancy; equally, it is important to give information on danger signs to enable the parents to react quickly and self-refer for obstetrics services.

"Pregnancy is most of the time safe, but you never know what will happen and when. Some complications can occur and you should be prepared for that. You must recognize when to go to the hospital immediately." (Gynecologist, 20+ years experience)

One interviewee argued that more education to expectant parents can reduce the number of pregnancy- and birth-related deaths in Nepal.

“Increased awareness will lead to reducing the maternal and neonatal mortality rate over the nation.” (Nurse/Midwife, 16 years experience)

Normal pregnancy, health, and wellbeing

Information and education should cover areas that are important for the pregnant woman and her fetus' health during pregnancy. An understanding of the physical changes in the pregnant woman in each trimester should be promoted. Topics such as the role of hormonal changes, mood swings, morning sickness, weight gain, and enlargement of breasts were suggested. Information on the risks of alcohol and tobacco in pregnancy, benefits of healthy eating as well as cultural values regarding foods and dining were emphasized.

“Give her food, eat together, because in Nepali culture the wife will eat last, but sometimes it is just a small amount left which is not enough for a pregnant woman. If she is good, the child will be healthy too.” (Nurse, 36 years experience)

A balance of rest and physical activity and why that is important should be discussed. The activity levels tend to differ between rural and urban women. In the villages it is common that women have heavy physical work, interviewees were concerned about appropriate levels of effort.

“They shouldn't carry an overload of grass, wood, or stone.” (Nurse/Midwife, 2 ½ years experience).

The importance of personal and dental hygiene was also suggested as a topic.

The foetus

Including information regarding the unborn child was suggested. Foetal movements and awareness of changes as well as when to seek medical assistance were prioritized. Foetal growth was suggested to be explained according to gestation weeks. Gender equality needs to be strongly emphasized since it is common for expectant parents to wish for a boy and not a girl according to Nepali culture.

“They have the idea that daughters are a burden while sons are good for society, for their house, and for taking the generation forward.” (Nurse, 10 months experience)

Childbirth

Birth preparedness

Providing information about birth preparedness was a key suggestion. Location for the birth, the importance of having an SBA near, items to prepare (such as clothes for the newborn), and availability of government subsidies for both antenatal check-ups and institutional births are all important topics to address. If a woman, despite the recommendations, decides to deliver at home, one interviewee expressed:

“You should not give birth inside the cowshed because it is not clean and it may cause infection for the baby and the mother. In winter it is very cold as well, better to give birth inside the house in a clean and warm room. It's important to emphasize the cleanliness and to keep the baby warm. Better to keep two pieces of clean cloths ready, one for wiping the baby and one to wrap the baby. Keep in mind the five C's: clean hands, clean surfaces, clean blades, clean cord ties, and clean cord stump.” (Nurse, 17 years experience)

Transportation to and from the hospital in time for birth is necessary to consider since special arrangements might be needed due to the infrastructure challenges in the country. One interviewee explained:

“In Nepal, transportation and roadway system is very difficult. If the mother in a remote area has to walk for several hours to reach the hospital, it would be better if she can come 2-3 days in advance and stay somewhere nearby the hospital until the time of giving birth.” (Nurse/Midwife, 2 ½ years experience)

The normal labor process

Information about labor was important. The interviewees suggested that topics such as signs of the start of labor, the possibility of labor starting before or after the due date, contractions, and amniotic fluid should be discussed. Also, labor pain, why it is painful, how the child's descent occurs, and how to deal with the pain with deep breathing and relaxation were emphasized. One interviewee explained about some traditions used in the villages:

“They use hot mustard oil to massage the face and the head which works as touch therapy. Then they mix some warm milk with sugar or serve the mother with hot teas for energy.” (Nurse, 35 years experience)

Complicated childbirth

ANC programme needs to include information about maternal and neonatal complications that may occur during or post-labor to prepare the couple since actions need to be taken quickly if anything untoward occurs during labor. Topics such as pregnancy-induced illnesses in the mother, prolonged labor, infection in mother or child, asphyxia in the child, or difficulties in breathing in the child at birth were recommended as core content in the programme.

"A prolonged labor can affect the child and increases the risk of asphyxia." (Medical doctor, experience unknown)

Postpartum

The mother: Normal processes and complications that could occur

Interviewees thought that couples should be aware of the complications that can occur after giving birth to increase understanding of why it is important to have an institutional birth and ensuring access to SBAs or knowing when to seek medical attention. Especially pointed out were the topics postpartum hemorrhage and infections.

Information about breastfeeding including topics such as immediate skin-to-skin care, frequency, duration, and benefits for mother and child was considered very important. It was suggested to illustrate how to position the child by the breast and explain how the child latches on.

"To show the position, how to hold the child and point at the nipple, and how the child attaches to feed." (Nurse/Midwife, 16 years experience)

To follow up and identify postpartum complications in mother and child, complications in breastfeeding, or other child-related questions, it was suggested to inform the parents about postpartum check-ups that are imperative at one week after birth. Brief information on what topics to be touched upon at the postpartum check-up could be given, such as nutritional intake for the mother, contraceptives, expected healing time for mother, and equal parenting roles.

The child: Normal processes and complications that could occur

Parents need an understanding of the basic care of a newborn child. The child needs to be kept warm, fed, clean, and dry while ensuring sleep, attention, and love from both parents.

"Not only the mother has responsibility for the upbringing of the child, but also the father has equal responsibility. He should give some time for the mother to rest and heal and spend time with the child because bonding is most important." (Nurse/Midwife, 17 years experience)

It is important that parents feel comfortable in recognizing abnormal changes in the newborns' behavior and demonstrate awareness of what symptoms need prompt attention by skilled health providers in health institutions, such as signs of jaundice, infections, and hypoglycemia. Therefore it was suggested that the ANC programme include a component which informs parents of danger signs in the child.

2. PROGRAMME STRUCTURE

Arrangements

Programme leaders and locations

The programme leader should preferably be a midwife or a nurse/midwife with experience of antenatal-, intrapartum, and postpartum care who has gained trust in the society. It was suggested to educate locals that are already known in the specific area and can customize the education by considering local needs. The information should be based on evidence-based knowledge.

"It's hard to recruit people from other places because they are far from home and salary is low. But if we educate the local people, then that will be more effective. They know that place and it is easy for them to gain trust in the local people and will, therefore, be listened to." (Nurse/Midwife, 35 years experience)

In the areas of Nepal where women groups are organized, they can advocate and organize the sessions.

"Here we call them: Amma Samuha, like women group. We can contact the head of the women's group and she can give the information to all of them and set up a time." (Nurse, 2 years of experience)

Various opportunities to receive information in different settings and locations were suggested, even multimedia. Antenatal classes can be organized at clinics where antenatal check-ups take place, for instance in the waiting room.

"The antenatal clinic is very good because there may be a particular day for antenatal check-ups and at that time the nursing staff could arrange for such a class." (Nurse, 17 years experience)

Participants

Mothers and fathers only or together with extended family members could be invited to the ANC programme.

"Both pregnant mother, husband, and mother in law should come. The mother-in-law is usually the caregiver of her (the mother) during pregnancy and after pregnancy, she should be very included." (Nurse, 17 years experience)

To optimize the teaching it would be beneficial to take into account the educational level of the participants in order to help the teacher target their teaching style to the participants' levels of knowledge.

"The group can have 4-6 couples and may be divided into age or education level. It's easier to counsel an educated person than an uneducated person." (Nurse, 39 years experience)

Pedagogies

Because of the educational status in Nepal, it is potentially preferable to offer verbal delivery rather than written information. To keep the audience alert during a presentation the teacher can use different pedagogical teaching tools such as using pictures and graphs.

"The classes should be taught in verbal form but also with some visual stimuli, like pictures or graphs. I think that would be more interesting for people to listen to." (Nurse, 10 months experience)

It was emphasized that group teaching should not replace the regular antenatal check-ups. By attending both sessions, there is a better opportunity to prepare mother, father and family for childbirth and parenthood.

Discussion

This study identifies the suggested format and content of an ANC programme to expectant parents and extended family members in Nepal. The programme can empower women in decision making about their own and their children's health and care by providing them with knowledge. The healthcare providers believe that more education in the area of

women's rights can contribute to a reduction of MMR and Neonatal Mortality Rate (NMR) in Nepal if ANC programmes would be rolled out to full scale. To reach most of the Nepali population with information and knowledge related to maternity care and reproductive rights, the ANC programme needs to be customized depending on location and level of education of the population. Serçekuş and Mete suggest adjusting the language according to the social level of the participants with the underlying assurance that everyone should understand the programme content.¹⁸ However, as found in this study and in the study by Deuba et al., some men and women mistrust healthcare providers providing ANC and would rather seek help from family or friends.¹⁹ Therefore in line with Morrison et al.²⁰ one suggestion is to provide a *training of trainers* structure enabling the local SBA trainers to conduct the ANC programme, or alternately use existing local women group meetings as a platform to deliver content to expectant couples/in-laws with the help of the women group leaders. Continuous support would be necessary to ensure adequate supervision and maintain enthusiasm in the local workers.²⁰ Expectant parents in rural areas would benefit from ANC programmes closer to home to avert transportation challenges in the mountainous terrain, which is a common reason why expectant rural mothers do not show up for the regular antenatal check-ups at the health facility.²¹ The ANC programme can be attached to the regular antenatal check-ups. With this background, eight ANC programme sessions might be appropriate and achievable in rural areas of Nepal, as recommended by recent WHO guidelines to reduce perinatal mortality and improve women's experiences of care (1). It is also in line with Serçekuş and Başkale who described eight group sessions in a rural area of Turkey which included an ANC programme which was culturally customized, and informed by participants in a locally specific context.²²

The SBAs suggested a wide range of content to be included in a culturally tailored ANC programme intervention in Nepal. The healthcare providers believed that improving expectant parents and in-laws' knowledge and understanding in key areas would better prepare the women and help them to stay healthy throughout the perinatal period as well as increasing the likelihood of keeping their children healthy during the same period. Knowledge improves confidence and a sense of control in women during pregnancy, at the time of giving birth and postpartum.²³ Moreover, one study by Deuba et al.¹⁹ demonstrates how raised awareness about pregnancy among men may even decrease intimate partner violence during pregnancy, a significant problem in Nepal.²⁴ The misconception that frequent intercourse during the pregnancy will increase the chances of getting a baby boy must be corrected in order to support women giving birth to baby girls.¹⁹ Moreover, many rural women have no access to money,

meaning that any decision that has a cost attached, such as paying for transport to get to a clinic, requires the permission of the person in the family who controls the purse strings.²⁵ This underscores the importance of directing ANC programme content not only to the pregnant woman but also to the expectant fathers and family members. Increased knowledge about pregnancy promotes physical and psychological health, gender equality, and empowerment in women with potentially less intimate partner violence, loss of dignity and gain of respect, women's rights, and decision making power.²⁶⁻²⁷

The findings in this study indicate that information about the birthing process was needed to prepare the expectant couple for the event. This finding is in line with an interview study in Turkey from 2016 with 72 participants confirming that evidence-based education will reduce anxiety and fear of birth.²² In a country with a rapidly increasing cesarean section rate,²⁸ the benefit of a normal birthing process must be emphasized in an ANC programme to strengthen the woman's trust in her own body rather than enhancing fear of complications that could occur. When designing an ANC programme intervention, consideration must be given to Nepali people's strong religious beliefs and traditions which may not shift regardless of the education and evidence provided for pregnancy and childbirth.²⁹ The goal of a culturally tailored ANC programme is to inform women, men, and their extended family of choices to promote health and wellbeing for women and children in Nepal in line with Sustainable Development Goal 3.²⁶

As infant mortality includes children up to the age of one year (1), the findings in this study indicate the importance of including information about early parenthood. To talk about the child's needs, danger signs, benefits of breastfeeding, nutrition, growth, and vaccinations before the child is born will increase self-efficacy in the parents.³⁰ Studies show that parents often feel unprepared for taking care of a child, particularly of a newborn during the first days and months,³¹ which might increase newborn morbidity and mortality in the absence of evidence-based knowledge. The infant mortality rate in Nepal 2018 was 26.7 deaths/1000 live births³² clearly indicating a need for adequate education about newborn care to expectant parents and in-laws.³³ The value of educating the expectant parents and their families should not be underestimated in Nepal and other traditional societies. This needs to be further investigated through longitudinal and in-depth quantitative studies.

Strengths and limitations

The first strength is that healthcare providers have shared their experiences and perspectives on what information is preferably included in an ANC programme for parents-to-be and other members of their extended families in Nepal. Like Milne et al.'s findings,²⁵ our study also is limited since expectant parents and family members themselves have not been interviewed about what information they were lacking.¹⁸ The health care providers have expert knowledge on the topics, which makes it possible to establish trustworthy information that will be usable for the development of a culturally tailored ANC programmes in Nepal. The chosen method of sampling, which was convenient-, and snowball sampling affected credibility but is also a limitation due to the limited two months' time period of data collection.¹⁶

The professionals of different cadre complemented each other which was a strength in the interviews. The interviews revealed that professional experiences differed significantly such that no single group has all information across the perinatal continuum. For example nurse/midwives that worked in the delivery room had much information to add about topics regarding childbirth, but not so much about pregnancy or the postpartum period. Nurses that worked more closely with families during the antenatal and postnatal period, on the other hand, had more knowledge about these areas rather than about childbirth. The findings demonstrate the need for a comprehensive and inter-disciplinary approach to the ANC programme would be a strength. A limitation was the language barrier which necessitated some interviews being performed with a translator which may lead to inconsistent interpretation or technique. Some information might have been lost in the translation process and that contradicts the confirmability in this regard. The findings can be transferred to other Asian countries designing education for antenatal women, men and families, as this study provides the evidentiary base necessary.

Conclusion and clinical implication

This ANC programme is culturally tailored to empower women with self-confidence and their decision-making power may increase in the family system regarding their own and their children's health and wellbeing. Increased knowledge in pregnancy, childbirth, and in the care of the child will promote respect, dignity, decision-making power for women based on knowledge regarding their own and their children's health and wellbeing. The findings of this study can hence be used for designing culturally tailored ANC in Nepal. This study can help those designing culturally sensitive ANC programmes in similar contexts.

Authors' contribution

All authors have made substantial contributions to the conception and design, or acquisition of data, or analysis and interpretation of data and been involved in drafting the manuscript or revising it critically for important intellectual content. They have further given final approval of the version to be published and sufficiently participated in the work to take public responsibility for appropriate portions of the content; and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflicts of interests and funding

No conflict of interest. The Minor Field Study programme funded the first author's research travel to Nepal.

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Complementing material

Semi-structured Interview Guide

Interview with midwives, skilled birth attendants (SBA), midwife students, PHC nurses, and medical doctors.

Introduction to the interview:

"You are invited to this interview to talk about topics that you think would be necessary for expectant parents to know of when it comes to pregnancy, childbirth, and early parenthood. We will focus on the mothers and fathers you meet daily through work, their circumstances, and their level of knowledge about these topics."

With expectant couples, I mean couples that are already pregnant.

Presentation of the researcher

- Name, (personal and) professional background.
- Presentation of the study.
- The explanation of why the participants were invited and why they were selected.
- What the expectations of the interviews are.

General questions

- Name
- Age
- Education?
- What is your professional background? How long experience?
- What is your current occupation?

Pregnancy

- What topics relating to pregnancy would expectant couples and extended families in Nepal need information about in antenatal classes?
- What do expectant couples already know about... (the topics down below)
- What do you think expectant couples need to know about... (the topics down below)
 - Habits that can affect the child
 - Diet
 - Physical activity
 - Tobacco, alcohol and drug use
 - Stress
 - How pregnancy affects the mother
 - Physically
 - Mentally
 - Anatomy
 - Physiology
 - The unborn child

- Development
- How to connect

Childbirth

- What topics relating to childbirth would expectant couples and extended families in Nepal need information about in antenatal classes?
- What do expectant couples already know about... (the topics down below)
- What do you think expectant couples need to know about... (the topics down below)
 - Normal childbirth
 - Indication of that the process has started
 - Pain
 - Pain management
 - Breathing
 - Relaxation
 - Pain relief
 - Complicated childbirth
 - Induction
 - Instrumental
 - Complications for mother
 - Complications for child
 - Preparations
 - Physically
 - Emotionally
 - Financially

Early Parenthood

- What topics relating to early parenthood would expectant couples and extended families in Nepal need information about in antenatal classes?
- What do expectant couples already know about... (the topics down below)
- What do you think expectant couples need to know about... (the topics down below)
 - Premature children
 - Breastfeeding
 - Breast anatomy and physiology
 - Feeding behavior in a newborn child
 - Benefits of breastfeeding
 - Infant formula
 - The role of being a parent
 - Equality
 - The new family
 - Relationship

- Contraceptives

Form of classes

- Who would be suitable to teach antenatal classes?
- Where would be a good location to hold classes?
- What is more beneficial, individual education, or groups?