



**Perceptions of Nurses and Pregnant Women Regarding Quality  
of Antenatal Care in Bangladesh**

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of Antenatal Care in Bangladesh

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### **ABSTRACT**

Quality of antenatal care is an important determinant of safe motherhood. This descriptive study aimed to examine the differences between nurses' perceptions and pregnant women's perceptions regarding quality of antenatal care in Bangladesh. Fifty-six nurses and 56 pregnant women were randomly selected from eight medical college hospitals. The modified Quality of Antenatal Care Questionnaire consisted of technical care and interpersonal care scale was used for data collection. Cronbach's alpha coefficients were .87 for nurses and .88 for pregnant women's perceptions. Data were collected by the researcher and the research assistants. Data were analyzed by using the independent t-test and the Mann-Whitney U test. The results revealed that nurses' perceptions regarding quality of antenatal care was significantly higher than the pregnant women's perceptions ( $M = 179.45$ ,  $SD = 12.26$ ; and  $M = 164.49$ ,  $SD = 21.1$  respectively,  $t = 4.50$ ,  $p < .001$ ). The subscales of quality of antenatal care namely technical care and interpersonal care were analyzed by using the independent t-test and the Mann-Whitney U test, respectively. The result found that the nurses' perceptions regarding technical care was significantly higher than that of the pregnant women's perceptions ( $M = 118.49$  vs.  $M = 107.82$ ,  $t = 3.97$ ,  $p < .001$ ). Similar to

another subscale namely interpersonal care, the nurses' perceptions was significantly higher than that of the pregnant women ( $M = 68.07$  vs.  $M = 41.43$ ,  $Z = 4.47$ ,  $p < .001$ )

The recommendation is made to improving existing nursing practice regarding quality of antenatal care in order to shorten the discrepancies between the nurses' perceptions and the pregnant women's perceptions. Further in-depth interview and qualitative research may be needed to gain in-depth knowledge to improve the quality of antenatal care.

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# CHAPTER 1

## INTRODUCTION

### *Background and Significance of the Problem*

The condition of pregnancy may cause maternal death and sufferings due to lack of adequate care during pregnancy and childbirth. In Bangladesh, 69% of rural women did not receive any antenatal care (Chakraborty, Islam, Chowdhury, & Bari, 2003). Only 15% of deliveries occurred in health facilities and 90-94% occurred at home (Chowdhury, Hossain, & Halim, 2009). Thus most of mothers did not get any care from trained health personnel during the antenatal period or delivery (Bhuiyan, Mukharjee, Acharya, Haider, & Begum, 2005; Gayen & Raeside, 2007). As a result, the major causes of maternal death were diagnosed as unsafe abortion, eclampsia, obstructed labor, postpartum hemorrhage, and puerperal sepsis (Chowdhury et al., 2009; Human Right Impact Resources Center [HRIRC], 2002). In addition, most prevalent complications during pregnancy such as headache, high blood pressure, preeclampsia and excessive bleeding are evident and requiring adequate antenatal care from health facilities (Islam, Chowdhury, & Akhter, 2006). Nursing care in antenatal clinics can be useful for early detection of abnormalities: for example, pallor, high blood pressure, edema, poor fetal movement, inverted or flat nipples, and abnormal fetal presentation. It may contribute to prompt diagnosis timely for treatment. Thus it may result in promoting maternal health (Viccars, 2003).

During pregnancy, women may develop physical and psychological problems due to increasing demands of body and mind. First, physically anemia and less weight

gain during pregnancy are the most common complications in developing countries. For instance, in Bangladesh, due to short birth spacing and malnutrition, 50% of pregnant women are anemic; that may lead to maternal death (Chakraborty et al., 2003; Islam, Hossain, Islam, & Haque, 2005). In most cases, through the dietary regimen and health education in antenatal care service, anemia and less weight gain are potentially correctable factors of low birth weight (Isaranurug, Mo-suan, & Choprapawon, 2007; Scholl, 2005; Thassri, Kala, Chusintong, Phongthanasarn, Boonsrirat, et al., 2000). Second, psychologically 20% of pregnant women suffer from depression that has potential harmful effects on them and their babies (Brown & Muhajarine, 2006). Therefore, nursing care at antenatal clinics such as health information and positive interpersonal relationships between nurses and pregnant women may be important and help to cope with pregnancy related change and initiate pregnant women to practice the health promoting behaviors. As a result, all nurses' activities in antenatal clinics can promote the mother's physical and psychological well-being that may make her and her baby to be healthy and safe (Viccars, 2003).

Antenatal care is the maternal care during pregnancy that every pregnant woman needs for a better outcome. It is one of the pillars of safe motherhood (Islam et al., 2006; Urassa, Carlstedt, Nystrom, Message, & Lindmark, 2002). Large numbers of mothers die due to the complications occurring during pregnancy. Worldwide, the number of maternal deaths is approximately 530,000 per year (Chowdhury, Islam, Gulshan, & Chakraborty, 2007; Hoque, Hoque, & Kader, 2008). The rate of maternal death in Bangladesh is comparatively high, up to 320 per 1,000 cases per year (Government of the People's Republic of Bangladesh, 2007; Chowdhury et al., 2009; Islam et al., 2005; Sayed, Asiruddin, Helal, Mannan, &

Murray, 2006). In addition, 80% of women suffered from at least one morbidity and 9 million survive with pregnancy related complications that seriously hamper their social life and health (Chakraborty et al., 2003; Chowdhury et al., 2007; HRIRC, 2002). On the other hand, globally, neonatal mortality rate is 36 per 1000 live births; this rate in Bangladesh is 41 per 1000 live births (Mercer et al., 2006; Sayed et al., 2006). Twelve percent of infants lost their mothers on the day of delivery and died within 2 months (Gayen & Raeside, 2007). As a result, based on extensive reviews of maternal and neonatal mortality and morbidity, the health care delivery system needs to find out the determinants that may be effective in reducing maternal mortality and morbidity.

Antenatal care is an important determinant of safe motherhood and a key strategy for reducing maternal mortality and morbidity (Simkhada, Teijlingen, Porter, & Simkhada, 2007; Urassa et al., 2002). Through the appropriate assessment and providing information during antenatal care, nurses can promote maternal health (Rumbold & Cunningham, 2008). Consequently, pregnancy with complication and 90% of maternal death could be prevented (Chowdhury et al., 2007; Islam et al., 2006). The attending rate of pregnant women in antenatal care is presently more than 80% in Thailand and in Tanzania, (Isaranurug et al., 2007; Urassa et al., 2002), whereas this rate is only 48% in Bangladesh (HRIRC, 2002). Utilization of care depends on pregnant women's perception and satisfaction on the quality of antenatal care services. Around the world, quality of care during the antenatal period plays a vital role to promote maternal health, better birth process, and a healthy baby. Quality of care is a multidimensional concept (Rajicic & Ciric, 2008) and refers to the standards of care that are regularly monitored by nurse or other trained health

personnel (Rani, Bonu, & Harvey, 2008). Below standard quality contributes significantly to high maternal mortality (Fawole, Okunlola, & Adekunle, 2008). According to this study, quality of antenatal care is focused on the process of care that represents the nurse's actual performance to the pregnant women. Many disciplines are involved with the structure of care. But as a professional, nurses have the important role of making change in the process of care to improve its quality in order to meet the pregnant women's needs. Therefore, nurses' perceptions and pregnant women's perceptions regarding quality of antenatal care should be explored in order to maintain and improve the standard of quality care in antenatal care services.

Perceptions of health care providers including nurses and physicians can be different from clients' perceptions (Muntlin, Gunningberg, & Carlsson, 2006). If pregnant women have a low level of perception regarding quality of care, that may demotivate them to use antenatal care service (Rani et al., 2008; Rashid, Savchenko, & Hossain, 2005; Simkhada et al., 2007). But the nurse usually perceives regarding quality of care, is at a high level. For this reason, this study explored nurses' perceptions and pregnant women's perceptions to improve nurses' existing competency in antenatal care and to provide better care to the pregnant women and satisfied them.

#### *Objectives of the Study*

1. To identify the level of nurses' perceptions regarding the quality of antenatal care.
2. To identify the level of pregnant women's perceptions regarding the quality of antenatal care



3. To compare the perceptions of the quality of antenatal care between nurses and pregnant women regarding the quality of antenatal care

#### *Research Questions*

1. What is the level of nurses' perceptions regarding the quality of antenatal care?
2. What is the level of pregnant women's perceptions regarding the quality of antenatal care?
3. Is there a difference between nurses' perceptions and pregnant women's perceptions regarding the quality of antenatal care?

#### *Hypothesis*

There is a difference between nurses' perceptions and pregnant women's perceptions regarding quality of antenatal care.

#### *Conceptual Framework*

The conceptual framework of this study was modified from the literature of Donabedian (1980) and Boller, Wyss, Mtasiwa, and Tanner (2003). Avedis Donabedian was a pioneer who developed a basic framework to assess the quality of care (Eldar, 1999; Glickman, Baggett, Krubert, Peterson, & Schulman, 2007; Steffen, 1988). From his framework, 'process' of care was selected to guide this study. It is defined as normative behavior of nurses that is perceived by nurses and clients. Normative behavior of nurse (nurse's performance) in this study was focused on activities that nurses provided at their antenatal clinic. In addition, this study was

conceptualized based on Boller et al. (2003) which focused on technical care and interpersonal care (Figure 1). First, technical care is the activity that nurses provide to the pregnant women at antenatal care for assessment and health education. The assessment includes: (1) history taking, (2) physical examination, (3) abdominal examination, and (4) laboratory investigation. The health education includes: (1) nutritional management, (2) health risk management, (3) breastfeeding, (4) newborn care, and (5) postnatal care. Second, interpersonal care consists of the activities that nurses provide to pregnant women at antenatal clinics for psychological well-being. It focused on (1) providing comfort, (2) maintaining privacy, (3) building relationship, and (4) respecting autonomy.

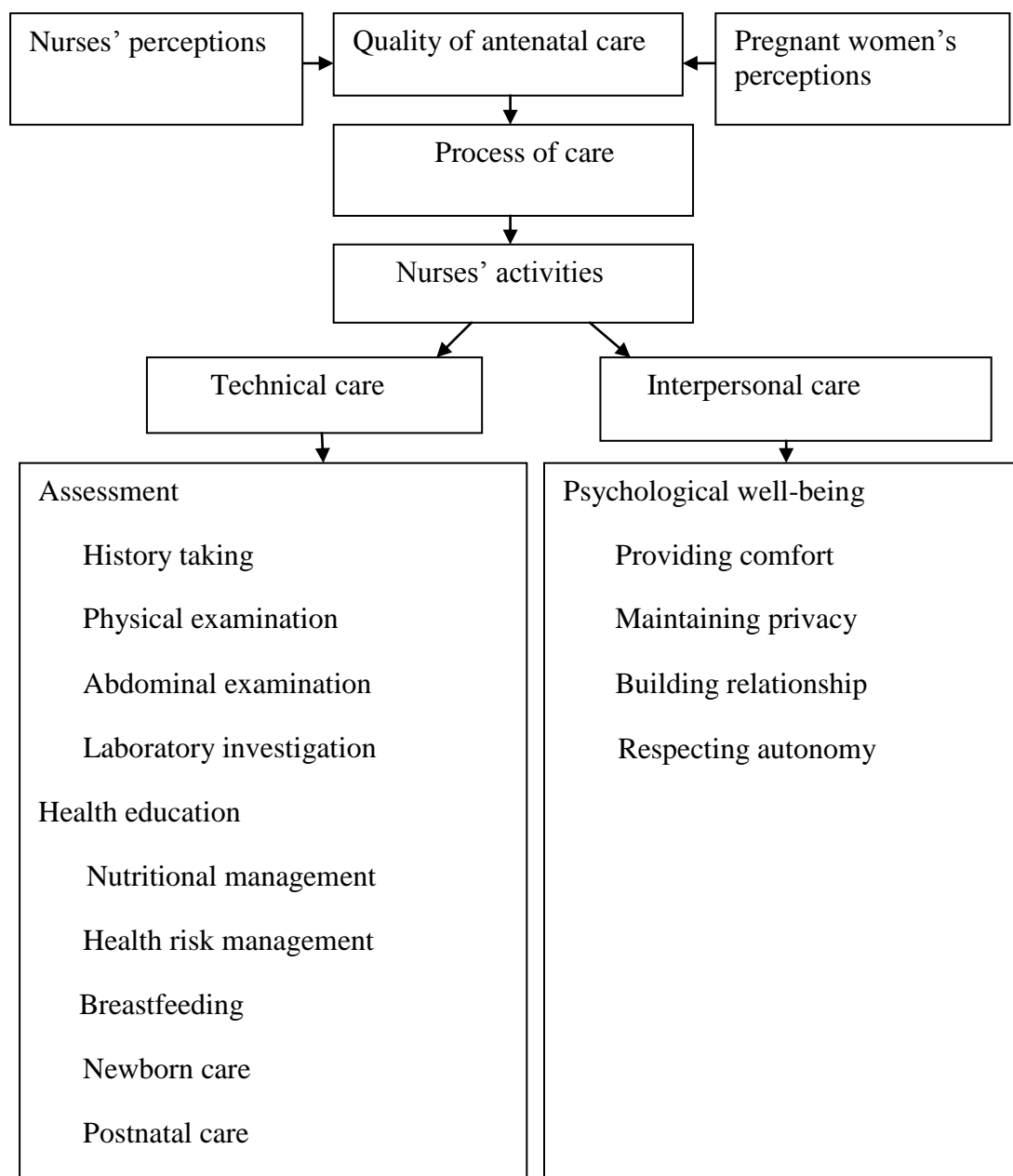


Figure 1

*Conceptual Framework of the Study*

### *Definition of Terms*

*Perceptions* refer to the opinions and understanding of nurses and pregnant women about the activities that are performed by nurses at antenatal clinic regarding quality of antenatal care.

*Quality of antenatal care* refers to the process of care that the nurse provided to pregnant women at the antenatal clinic, which includes technical care and interpersonal care.

*Technical care* refers to the nurse's activities provided for pregnant women at the antenatal clinic, including assessment and health education. Assessment consists of women's history taking, physical examination, abdominal examination, and laboratory investigations. Health education consists of nutritional management, health risk management, breastfeeding, newborn care, and postnatal care. Perceptions regarding technical care were measured by using the modified Quality of Antenatal Care Questionnaire (QACQ).

*Interpersonal care* refers to the nurse's activities provided for pregnant women at the antenatal clinic concerning their psychological well-being. It consists of providing comfort, maintaining privacy, building relationship, and respecting autonomy. Perceptions regarding interpersonal care were measured by using the modified Quality of Antenatal Care Questionnaire (QACQ).

### *Significance of the Study*

Findings of this study would be helpful as a guide for the improvement of antenatal care. It would provide baseline information reflecting the current quality of antenatal care in Bangladesh. The findings would delineate areas for further

improvement, particularly at the clinical site, antenatal clinics. Improving quality nursing practice would not only contribute to the health of mothers and their babies, but also to the image of nursing profession.

## **CHAPTER 2**

### **LITERATURE REVIEW**

This chapter presents the literature related to the quality of antenatal care perceived by nurses and pregnant women. The review covers: (1) antenatal care, (2) quality of care, (3) quality of antenatal care, (4) factors influencing the quality of antenatal care, (5) quality of antenatal care in Bangladesh, and (6) perceptions of nurses and pregnant women regarding quality of antenatal care, respectively.

#### *Antenatal Care*

Pregnancy is expected to be a joyous time and preparation for the new baby. There is a need for pregnant women to receive antenatal care (Brown & Muhajarine, 2006). Antenatal care is an important determinant to maximize the pregnant women's health through appropriate assessment, screening and preventive intervention through health education (Rumbold & Cunningham, 2008; Simkhada et al., 2007). Regular check up from early pregnancy would help identify the risk factors that can be diagnosed for timely treatment. Through this care, the pregnant women can build up a good interpersonal relationship with the nurse to achieve the best outcome of pregnancy (Viccars, 2003). The four aspects of antenatal care need to be reviewed: (1) definition of antenatal care, (2) objectives of antenatal care, (3) components of antenatal care, and (4) nurses' antenatal care role, as follows.

#### *Definition of antenatal care*

Antenatal care can be defined as that received by pregnant women during their

gestational period in order to improve their pregnancy outcome (Viccars, 2003; Reza, 2008; Trinh, Dibley, & Byles, 2007). Antenatal care refers to the planned series of health care services offered to the pregnant women with an ultimate goal of a healthy mother and infant. Also, it can be defined as a proper assessment of risk factors and a series of health examinations which enable health personnel to uncover conditions in the mother that may threaten her or her fetus during pregnancy (Viccars; Urassa, 2002). Finally, according to the World Health Organization (2006), antenatal care constitutes screening for health and socio-economic conditions likely to increase the possibility of specific adverse pregnancy outcomes; providing therapeutic interventions known to be effective; and educating pregnant women about planning for safe birth, emergencies during pregnancy and how to deal with them. In brief, in both developed and developing countries, antenatal care is the regular monitoring of the mother's condition during pregnancy in order to promote maternal health and achieve healthy outcomes of pregnancy.

#### *Objectives of antenatal care*

The objective of antenatal care is to ensure that the wanted pregnancy culminates in the birth of a healthy infant without impairing mother's health (Murray, McKinney, & Gorrie, 2002). Caregivers need to observe the progress of pregnancy in order to support maternal physical, psychological, social, and spiritual well being; as well as normal fetal growth (Viccars, 2003; Hoque et al., 2008). All objectives are set up to adapt the pregnant women to their physical change and promote maternal health in order to expect better outcomes of pregnancy. Consequently, a decrease in maternal death and suffering likely to be achieved. Viccars, (2003) stated that, to achieve the aim of antenatal care, all nurses should follow these activities:

(1) developing a partnership with the women and their families, (2) providing a holistic approach to meet individual needs of pregnant women, (3) promoting consciousness about health issues for the women and their families, (4) exchanging information with the women and their families and enabling them to make informed choice about pregnancy and birth, (5) being an advocate for the women and their families, (6) recognizing complications of pregnancy and appropriately referring women to the members of multidisciplinary team, (7) facilitating the women to make an informed choice about method of infant feeding, and (8) offering education for parenthood.

#### *Components of antenatal care*

The service at antenatal care is offered to pregnant women in order to prevent certain complications such as anemia, and to identify the risk women for further management to improve pregnancy outcomes. Most maternal and newborn deaths could be prevented by available cost-effective measures which pregnant women have access to in basic medical services such as, antenatal care in pregnancy (Chowdhury et al., 2007; Islam et al., 2006). Generally, there are three basic components of antenatal care: (1) early and continuing risk assessment, (2) health promotion, and (3) medical and psychosocial intervention (Murray et al., 2002).

*Early and continuing risk assessment.* The most important component of antenatal care is assessment. From the beginning of pregnancy, assessment should be continued to identify the risk factors that may have an adverse effect on the mother and her fetus (Murray et al., 2002). In the study of explorations in quality assessment and monitoring, Donabedian (1980) mentioned that a proposal about assessment of quality of antenatal care needs to be undertaken (Lane & Kelman, as cited in



Donabedian, 1980). During assessment, the nurse needs to perform various activities of antenatal care provision including history taking, physical examination, and laboratory investigation.

1) History taking: To assess the risk factors in pregnancy, the nurse should take the history from pregnant women about their families chronic and congenital diseases, past and present medical disease and surgery, menstruation, past and present pregnancy, and history of preconception care (Boller et al., 2003; Rani et al., 2008).

2) Physical examination: Physical examination is one of the most important components of antenatal care. In physical examination, the nurse assesses anemia, cyanosis, edema and jaundice; checks the teeth and gums for infection and dental caries (Boller et al., 2003; Viccars, 2003); measures blood pressure, weight and height; performs abdominal examination by measuring fundal height, position of fetus, counts fetal heart sound; and evaluates the status of current pregnancy.

3) Investigation: The nurse needs to perform laboratory investigations to identify risk factors requiring prompt action. These may include urine analysis to determine levels of albumin and sugar, and urinary tract infection; blood screening to measure the hemoglobin or hematocrit level of pregnant women to measure the nutritional status and need for iron supplement (Viccars, 2003; Donabedian, 1980; Murray et al., 2002).

*Health promotion.* Health care providers need to provide health information to pregnant women to enhance their health status and well-being, such as general health education about proper nutrition; birth spacing and family planning information; advice to pregnant women about the danger signs of pregnancy,

breastfeeding; and preparation for newborn and postnatal care after childbirth (Fawole et al., 2008; Rani et al., 2008; Trinh et al., 2007).

*Medical and psychosocial intervention.* In antenatal care services health care providers need to furnish care to identify risk factors and measure the progress of maternal health status and fetal growth. These include: monitoring body weight, measuring blood pressure, recording uterine size, estimating the gestational age of the fetus, recording the time of first fetal movement, fetal presentation and auscultation of fetal heart rate; and giving an antenatal appointment (Boller et al., 2003; Donabedian, 1980; Rani et al., 2008; Trinh et al., 2007). In addition, pharmacological or non-pharmacological intervention may be needed to manage common discomfort due to pregnancy as follows:

- 1) Management of common discomforts of pregnancy. Some discomforts usually appear during pregnancy which includes feelings of uneasiness. The antenatal care nurse should know these discomforts and their management. The most common discomforts causing of maternal anxiety are: fatigue, nausea and vomiting, constipation, heartburn, vaginal discharge, varicose veins, back ache and hemorrhoids. To eliminate anxiety, nurse need to provide nursing intervention to relieve their discomforts (National Collaborating Centre for Women's and Children's Health [NCCWCH], 2008; Sidebotham, 2004; Smith & Michel, 2006).

In conclusion, the components of antenatal care are the sequence of essential activities needed to monitor maternal condition and progress of the fetus during pregnancy. To monitor this progress, nurses need to conduct initial and continuous assessment in order to promote maternal and fetal health. Medical and psychological

intervention is needed by antenatal care services to manage common discomfort during pregnancy and to enhance maternal well-being.

#### *Nurses' antenatal care role*

Nurses play a key role in providing a high quality of maternal services throughout the antenatal period and childbirth that contribute to reduce maternal and perinatal death (Lavender & Chapple, 2004). Trinh and colleagues (2007) stated that an antenatal care provider such as a nurse has a great impact on the quality of care. Nurses should have moral, ethical and professional responsibility to provide care to pregnant women (Viccars, 2003). They are responsible for care giving, providing up-to date health education and listening to clients' suggestions about the services which women need (Kritchaoen et al., 2005). To identify those needs, the nursing process is the accepted framework used for assessing, analyzing, planning, implementing and evaluating nursing care (Murray et al., 2002). Nurses can take complete health history, perform physical examinations, order and interpret laboratory investigations, and provide primary care for health maintenance and promotion. Based on this framework, nurses' role in antenatal care is: (1) assessment, (2) analysis, (3) planning, (4) implementation and (5) evaluation.

*Assessment.* Assessment should be skillful systematic and purposeful; and collection of physiological data and information related to psychological, social and cultural considerations should be carried out effectively. Nurses gather information that help to diagnose abnormalities at the earliest stage. The nurse should use the initial assessment and subsequent assessments for pregnant women in the antenatal clinic.

1) Initial assessment. In the antenatal clinic, during first visit of the pregnant woman the nurse should assess health status by taking her history, performing a physical examination, laboratory tests, and assess the risk factors as follows.

1.1 Taking history. The nurse takes the history of previous and present pregnancies and menstrual history in order to establish the expected date of delivery (Kirkham, Harris, & Grzybowski, 2005). Also, she takes medical and surgical history, including chronic conditions such as diabetes mellitus, hypertension, renal disease, or any surgery that may affect pregnancy; family history, and chronic disease of family members that may reveal a pattern of genetic abnormalities. A psychosocial history should also be taken in order to establish the maternal feelings and socio-economic condition of the mother (Boller et al., 2003; Donabedian, 1980; Murray et al., 2002; Rani et al., 2008; Trinh et al., 2007).

1.2 Physical examination. The nurse should perform the physical examination to detect previously undiagnosed problem that may affect pregnancy outcome. These examinations include: checking vital signs such as blood pressure, pulse, respiration, temperature; observing venous congestion and edema; measuring height and weight, pelvic diameter, fundal height; and hearing fetal heart sound; checking skin color to detect jaundice and anemia, checking the thyroid gland for enlargement and oral hygiene for infection, examining breasts to detect any abnormal signs (Boller et al., 2003; Green & Wilkinson, 2004; Murray et al., 2002). Flat or inverted nipples might affect the newborn for breastfeeding; therefore, during the antenatal check-up the nurse should examine the breasts to prepare the woman for effective breastfeeding after her childbirth.

1.3 Laboratory test. The commonly used laboratory tests during pregnancy are: blood grouping; blood test for hemoglobin and hematocrit; complete blood count; Rh factor and antibody screen; venereal disease laboratory test (VDRL); rubella titer; skin test to screen tuberculosis; hemoglobin electrophoresis to screen for sickle cell trait; hepatitis B screen; HIV (Human Immunodeficiency Virus) screen; urine analysis testing urine to check the an amount of protein, glucose, ketones; and bacteria papnicolaou (Pap) smear to screen for cervical neoplasia; and maternal blood glucose test to screen for gestational diabetes mellitus (Boller et al., 2003; Green & Wilkinson, 2004; Murray et al., 2002; Rani et al., 2008; Trinh et al., 2007). Sometimes asymptomatic bacteria considered normal, but they may cause pyelonephritis due to changes in the renal tract during pregnancy; ketones may appear due to fat breakdown to meet the fetal demands; and urinary tract infection may develop. Therefore, to exclude these abnormalities the nurse should perform urine analysis for sugar and albumin at the first visit and in subsequent visits (Viccars, 2003).

In addition, during the initial visit, the nurse should assess some risk factors which may cause maternal and fetal complications. These are: maternal age below 16 years or more than 35 years; multigravida; weight below 45 kg or more than 90 kg; height below 154 cm; smoking; drug addiction; abnormal history of previous birth; chronic diseases such as diabetes mellitus, hypertension, cardiac disease, renal disease, thyroid disorders and concurrent infection (Murray et al., 2002). Thus, the nurse may contribute to diagnosis and provide timely treatment during risk assessment at antenatal clinic (Viccars, 2003).

2) Subsequent assessment. The antenatal clinic nurses should follow the ongoing assessment. Assessment for the signs of fetal well-being are required for maternal awareness. These include obtaining fetal heart sound with an ultrasonic Doppler device beginning in week 10 and soliciting reports of active fetal movement after quickening. In addition, follow up blood pressure and body weight, urine tests, monitor danger signs of pregnancy such as, fever or severe vomiting, headache, blurred vision, vaginal bleeding, onset of edema, painful urination and signs of preterm labour (Klossner, 2006; Murray et al., 2002). The nurses make a schedule for antenatal visits based on gestational age: first trimester, second trimester and third trimester as follows.

First trimester. Gestational age (G/A) starts at conception and continues for 14 weeks. In this period, the nurse should perform complete assessment; and look for signs of disease that may need treatment and for any evidence of previously undetected maternal illness (Klossner, 2006). She should take a history including menstruation, gravida, number of parity and living children and present and previous illness. Also she should perform a head to toe physical examination including the breasts; measure weight and height; check vital signs; assess nutritional status; detect risk factors; and make an appointment for a follow-up visits every 4 weeks (Viccars, 2003; Murray et al., 2002; Reza, 2008). All activities should be performed to give the pregnant woman a feeling of psychological well-being.

Second trimester. During the second trimester (G/A from 15-28 weeks) the nurse should follow up blood pressure, body weight, vital signs, urine for sugar and albumin tests; measure fundal height to evaluate fetal growth; ensure quickening of fetus by asking the mother, check fetal heart sound if gestational age is

more than 20 weeks. Nurses need to provide health education about nutrition in pregnancy, danger signs of pregnancy, newborn care, breastfeeding, need for vaccination of the mother and the baby, and postnatal care. A follow-up visit every 2-3 weeks interval is needed (Viccars, 2003; Murray et al., 2002; Reza, 2008)

Third trimester. During the third trimester (G/A from 29- 42 weeks) the nurse should follow up blood pressure, body weight, fetal heart sound; Leopold's maneuver an abdominal examination should be conducted to assess the location and presentation of the fetus during the third trimester (Murray et al., 2002).

Thus, the initial and subsequent assessments are the basic components of antenatal care that nurses need to perform in the clinic. The nurse's activities in this study were focused on her initial assessment and subsequent assessments based on gestational age of the fetus.

*Analysis.* The nurse should perform a critical analysis of the pregnant women's data before diagnosis. Unexamined assumptions may lead to irrelevant misdiagnosis of the actual problem (Murray et al., 2002). Based on the analysis, the nurse can diagnose the pregnant woman and plan to implement nursing care for selected cases. Klossner. (2006, p. 146) mentioned possible nursing diagnoses for pregnant women for example: (1) anxiety related to hesitation regarding pregnancy and not knowing what to expect during the office visit, (2) Health-seeking behaviors related to maintaining a healthy pregnancy and concerns regarding the common discomforts of pregnancy, (3) deficient knowledge of self-care during pregnancy, (4) fears related to the unknowns of childbirth. These fears may include concerns regarding safe passage of self and infant through the delivery experience, and concerns related to assuming the parenting role.

*Planning.* Based on the nursing diagnosis, nurse plans to implement health related knowledge and nursing intervention through the health education program. For example, the nurse can plan to provide nutritional information to promote maternal health and fetal growth which could facilitate pregnant women to increase protein and iron intake; reducing complications from their poor health status (Thassri et al., 2000). In addition, antenatal classes prepare for the mothering role, and breastfeeding, and alert them to receive postnatal care after the birth. As a result pregnant women would be able to promote and safeguard themselves and their fetuses throughout the pregnancy. The nurse should plan to provide information to the pregnant women to relieve common discomfort during pregnancy. Then nurse should also recommends ways to modify behavior that may have harmful effects on mother and fetus such as feeling stress, resting less and doing hard work (Murray et al., 2002).

*Implementation.* The antenatal clinic nurse should implement planned nursing care to the pregnant women in the antenatal clinic. She should asking women about their discomforts, provide care to relieve that, maintain calm and confident manner during action, protect privacy during physical examination, use active listening and provide factual information concerning her treatment plan (Klossner, 2006; Viccars, 2003; Murray et al., 2002). Nurses need to provide health information about nutrition, newborn care, breastfeeding benefits and techniques, and birth spacing in antenatal health education classes. In addition, the nurse alerts the pregnant women to danger signs of pregnancy including vaginal bleeding, rupture of the membrane, swelling of the fingers or puffiness of face, blurred vision, abdominal pain, painful urination, severe vomiting and decrease in fetal movement, and a plan



for immediate action incase of any danger sign (Fawole et al., 2008; Rani et al., 2008; Murray et al., 2002).

*Evaluation.* Evaluation is the outcome of care. Nurses need to evaluate the implemented health related information and other nursing interventions effective for pregnant women based on their understandings. Evaluation promotes safety and well-being of pregnant women and their fetus throughout the pregnancy. In the evaluating phase, pregnant women verbalize their understandings about health related knowledge and methods that help them to promote their health status and relieve discomforts of pregnancy. The nurse should ask the pregnant women about their plans to modify habits that may adversely affect their health. After evaluating, if the nurse felt that her implementation was effective in antenatal clinic, she can collaborate with the family to define new plans for implementation (Murray et al., 2002 ).

In conclusion, the nurse plays a key role in the antenatal clinic by identifying the women's physical and psychological condition through initial and subsequent assessment. Through the nursing process, data analysis for nursing diagnosis, planning, implementing and evaluation, makes a proper guideline to provide nursing care for pregnant women in antenatal clinic.

### *Quality of Care*

Quality of care is an important issue and complicated to define and measure (Donabedian, 1966). It is a mistaken often incorrectly as goodness, or luxury. Donabedian, 1980; Parasuraman, Zeithaml, & Berry, 1985). To study the quality of care, it is important to review its definition and dimensions.

### *Definition of quality of care*

Quality of care is defined as the ability to access efficient care with the intention of maximizing health benefits in relation to the needs of the client (Campbell, Ronald, & Buetow, 2000). Donabedian (1966 & 2005) defined quality as a reflection of values and goals currently used in the medical care system and in the larger society. In addition, Campbell et al. (2000) defined the quality of care as a system based model composed of structure and process. Based on these, Donabedian (1966) defined quality of care as the extent to which actual care is consistent with present criteria for good care.

Blumenthal (1996) mentioned four major perspectives regarding quality of care: the perspective of the health care professional, the patient, health care plans and organizations, and the purchaser. All of these define quality of care differently. First, the health care professional defines quality of care as the attributes and result of care provided by the practitioner to care for its recipient, emphasizing technical excellence and interaction. Second, the patient's perspective of quality of care was defined as the client's view about the care they received with satisfaction and its outcome the level of "patient centered care". Third, health care plans and organization defined quality of care as the emphasis on the health of enrolled populations and attributes of care that reflect on the implementing method of organization. Finally, quality of care from the purchaser's perspective involves effectiveness and cost of care. In this study, quality of care mainly focused on the quality of health care and quality of nursing care. Some definitions of quality of care are shown in Table 1.

Table 1

*Definitions of Quality of Care*

Author and year	Definitions of quality of care
Campbell, Ronald, & Buetow (2000)	Care received by individuals from formal institutional health care systems in which individuals or caregivers have been chosen to access
Donabedian (1988)	Management expected to achieve the best balance of benefits and risks
Gallagher (2005)	Perspective of meeting a minimum standard through the absence of defects and capacity to build current viewpoint
Higashi, Wenger, Adams, Fung, Roland, & et al. (2007)	Percentage of quality indicators satisfied between patients and healthcare provider and the number of chronic medical conditions of each patient
Uys & Naidoo (2004)	A dynamic quality indicating right way, to do improving outcomes for patients, their families and their communities

In conclusion, quality of care may be defined as the ability and efficiency of care providers such as nurses and physicians, to meet the client's need based on mutual understanding and satisfaction of both care provider and receiver tending to maximize the expected benefits of care.

*Quality of health care.* Quality of health care is a multidimensional concept that has been defined in various ways (Al-Ahmadi & Roland, 2005). It is the harmless but effective care carried by health professional. Various research studies demonstrated widespread deficiencies in the quality of health care. Society is challenged by the task of effective implementation of quality improvement programs

(Glickman et al., 2007). Donabedian (1980) mentioned that quality of health care is the interaction related to the art of care. This includes communicating, maintaining patient trust and improving care with concern, empathy, tact and sensitivity. It is the degree to which health services for individuals and population increase the likelihood of a desired outcome and is consistent with current professional knowledge. Similarly, Offei, Bannerman, and Kyeremeh (2004) also stated that the quality of care means routine healthcare activities that the medical, nursing and laboratory field's staff perform to benefit the patient without causing any harm and pay attention to the client's needs.

*Quality of nursing care.* Quality of nursing care is considered an important healthcare service issue. Nursing professionals comprise the largest and most vital component in the healthcare delivery system in both public and private sectors (Kunaviktikul et al., 2001). Quality of care is judge not only by the physician; the nurse also measure quality through a process of care largely assessed by patient health (Brown, 2007). In the nursing community, the importance of quality of nursing care was first recognized by Florence Nightingale. She reported that the patients defined the quality of nursing care in terms of (1) the personal quality of nurse, (2) holistic care, and (3) therapeutic nurse patient interaction and having proficient nurses care (Taylor, Hudson, & Keeling, as cited in Chunuan, 2002). Kunaviktikul and colleagues (2001) conducted a study that defined the quality of nursing care from hospital directors, directors of nursing service, nursing supervisors, head nurses and patients. Then hospital director defined the quality of nursing care as the standards of prompt and well-organized service to client to achieve satisfaction with that service. Nurse administrators and staff nurses defined the quality of nursing care as the nurse's

performance to the client based on nursing standards, to assure the client's safety and satisfaction. Different views regarding the quality of nursing care proposed by the client indicates that the performance of qualified nursing personnel is with compassionate and responsive and regards the client's need. Based on different perspectives, Kunaviktikul and colleagues summarized the quality of nursing care as the response to the client's physical, psychological, emotional, social and spiritual needs in a concerned manner to achieve the client's well-being and the satisfaction of both nurses and clients.

In conclusion, quality of care is necessary to the clients and aims to achieve their health needs and satisfaction. Quality of nursing care is part of the health care response to the client's needs. The caring attitude of the nurse helps achieve their well-being and satisfaction. In this study, quality of care is focused on the quality of the antenatal clinic based on technical and interpersonal aspect of care to the pregnant women.

#### *Dimensions of quality of care*

Quality of care is multi-dimensional in nature, its content and dimensions still a subject of debate (Rajicic & Ciric, 2008). Parasuraman and colleagues (1985) conducted research in four service areas: banking, credit card companies, stockbrokers, and service companies. They found that the expectation and perception of quality care are affected by five dimensions: (1) tangibility which refers to physical matter, equipment, and appearance of service staff; (2) reliability assuring deliver of a promised service; (3) sensitivity which focuses on the care provider's quick response to the clients; (4) safety which concern the professional knowledge and caring attitude of the staff and their capability of gaining trust; and (5) empathy which refers to the

caring attitude of the individual with attention for clients. In another view of dimensions of quality care, Donabedian (1980) proposed: (1) structure of care, (2) process of care, and (3) outcome of care. First, structure of care refers to organizational or physical setting, staff, and equipment. Second, process of care refers to how structure is brought into practice. Finally, outcome of care refers to the consequences of the care. These three dimensions were discussed in detail as follows.

*Structure of care.* Structure is a relatively stable characteristic of the care providers, tools and resources at their disposal, and also the characteristic of the physical and organizational settings of their working place. The perception of structure includes the human, physical, and financial resources essential to provide medical care (Eldar, 1999). It concerns number, distribution and qualifications of professional personnel; and the number, size, equipment, environment of hospitals, and other facilities. Also, structure reflects the organization of the medical or nursing staff in a hospital and the presence or absence of a quality evaluation effort as well as its characteristics of the health care process in details. The basic characteristics of structure are stable function to produce care or influencing the type of care. In this study, the structure of care was not examined due to its nature of un-modifiability from nursing contribution. However, the structure of care can contribute to the process of care and effects to quality of antenatal care. Therefore, the structure of care-related variables including hospital environment, number of health care providers including nurses, nurse to pregnant women ratio at antenatal care unit, and medical supplies were controlled in the research design.

*Process of care.* Process of care is defined as normative behavior. It is accepted by clients as good according to medical science or the ethics and values of

the society (Donabedian, 1980). There are three components of process of care; including the provider's performance, accessibility, and continuity. The provider's performance can be divided into: technical management and interpersonal care. Technical management concerns the application of science and technology of medicine and nursing, management of personal health problems, and social and psychological interaction between pregnant women and nurses. Interpersonal care refers to the manner in which health practitioner deals with the client. It includes concern, courtesy, respect for the client's autonomy, maintaining the client's privacy, explanation, reassurance, support, non-judgmental acceptance of the client's illness and behavior. Process of care can be judged by direct observation or recorded information which allows more or less accurate information about the on-going process.

*Outcome of care.* Outcome is the indirect approach to assess the quality of care. Outcome involves a change in a client's present and future health status. According to Donabedian (1980) outcome of care is the consequence of care rather than a component of care. Similarly, it refers to the result of process and the instant result of therapy (Kunkel et al., 2007).

In summary, quality of care has various dimensions based on the care delivery system. In this study, dimension of quality care is focused on the process of care which consists of technical care and interpersonal care.

#### *Quality of Antenatal Care*

In the health care system, quality is one criterion for good care. As well as quality of antenatal care, it reflects values and goals. The concept of quality of

antenatal care that was bounded in developed countries during the last two decades has expanded into developing countries including Bangladesh. Below standard quality contributes high maternal death (Fawole et al., 2008) especially among those who have easy access health care services (Marshal & Blondel, 1998). Pregnant women should receive clear and complete information regarding their condition of pregnancy and care provision. At the antenatal clinic, nurses need to provide antenatal care based on the client-oriented personal holistic approach (Pajnkihar, 2009). Quality of antenatal care is the standard of care regularly monitored by trained health personnel. Pregnant women need to initiate antenatal consultation from the first trimester. At least four antenatal consultations are needed with a doctor or a nurse (Rani et al., 2008). To review the quality of antenatal care it necessary to focus on dimensions of quality of antenatal care as follows.

*Dimensions of quality of antenatal care*

Quality of antenatal care can be assessed from its structure of care and the process of care. The process of care is the interaction between actual care given by the nurses and that received by the pregnant women at the antenatal clinic based on current professional knowledge (Donabedian, 1980). Dimensions of quality of antenatal care in this study were technical care and interpersonal care.

*Technical care.* Technical care consists of the activities of nurses at antenatal clinics. It focuses on assessment of the pregnant woman by taking history, performing physical examination, diagnosis by checking hemoglobin and urine for albumin; and providing health education to promote maternal health status (Boller et al., 2003). Similarly, the study conducted by Rani et al. (2008) and Trinh et al. (2007) reported that the technical care in the antenatal clinic focuses on several



activities such as measuring weight, checking blood pressure, testing urine for sugar and albumin, performing abdominal examination, measuring fundal height and monitoring fetal heart rate. It also includes the provision of health education to pregnant women about resting, nutrition, danger signs of pregnancy, newborn care and family planning information. Fawole and colleagues (2008) assessed pregnant women's perception regarding quality of antenatal care in three levels of health care facilities in Nigeria. They aimed to assess pregnant women's perception about the technical care focusing on laboratory investigation of urine and hemoglobin, measuring maternal weight, performing physical examination, and making appointment for subsequent visits. More than 98% of the women perceived that they received all these kinds of technical care from nurses or other care providers.

*Interpersonal care.* Interpersonal care refers to the activities of nurses or other care providers at the antenatal clinic. It focuses on caring attitudes, empathizing with and respecting pregnant women's autonomy. It can be measured by whether the nurse takes enough time, acts in a courteous manner and shows interest to listen to her and respect the need of her privacy (Boller et al., 2003; Rani et al., 2008). Muslim women are less likely to use reproductive health services due to lack of privacy. Exposure of arms and legs embarrassing for them, may contribute to underutilization of antenatal care. A lack of autonomous decision making on the part of women is another cause for underutilization (Simkhada et al., 2007). Respecting autonomy, maintaining privacy, explaining procedures in advanced, concern about women's comfort by offering them a seat and maintaining good interaction and relationship between nurses and pregnant women are the major aspects in the interpersonal quality of antenatal care (Boller et al., 2003). Before starting the physical examination, the

nurse-midwife should consider the pregnant woman's consent and comfort first (Viccars, 2003).

In conclusion, quality of antenatal care is focused on the nurse's role regarding two dimensions technical care and interpersonal care. Technical care in this study was focused on the nurse's assessment and provision of health education to the pregnant women; and interpersonal care focused on giving them a feeling of psychological well-being.

#### *Factors Influencing the Quality of Antenatal Care*

Quality of antenatal care is the standard for regular check up to assess and maintain health status of pregnant women. Several factors influence the quality of antenatal care, for instance, the structural facilities of the setting where the care is provided. Staffing, access to care, environment of check-up, waiting room and provision of health education exert a positive influence on health care providers for provide quality care at antenatal clinics in maternal and child health services in Bangladesh (Hasan, Chompikul, & Bhuiyan, 2007). Boller and colleagues (2003) conducted a study in Tanzania. This study aimed to compare the quality of antenatal care in public and private services. They found that structural attributes such as, facilities of settings have a positive impact on quality care, as do the care provider's technical competency and their caring manner.

Another study of quality of maternal care found that interpersonal relationship between pregnant women and nurse, viability of antenatal health education, information about postnatal health, and maternal role adjustment such as newborn, care and breastfeeding information are the important factors relating to the quality of

antenatal care (Sue, 1998). In health care quality, the client's satisfaction is a strong indicator in measuring the quality of antenatal care. The care provider's performance, respect of the client's autonomy and maintenance of privacy, were influential on pregnant women who perceived a high quality of antenatal care (Aldana, Piechulek, & Al-Sabir, 2001; Hasan et al., 2007).

Generally, care providers' and receivers' demographic characteristics also influence the quality of antenatal care. In extensive review, the results showed that quality of antenatal care was linked with the nurses' demographic characteristics such as their level of education, duration of job experience, and participation in training programs initiating a high quality of antenatal care (Boller et al., 2003; Kritcharoen et al., 2005). Moreover, Oladapo and Osiberu (2009) explored, sociodemographic characteristics of pregnant women in Nigeria, such as parity, number of living children, and Islamic religion influenced them in their perception of the quality of antenatal care.

In conclusion, quality of antenatal care is the level of accessibility of effective care from health facilities. It depends on the various issues such as, (1) facilities of the settings where care is delivered, (2) the health care provider's manner, and (3) their professional knowledge and skill to be able to meet the needs of pregnant women satisfactorily.

#### *Quality of Antenatal Care in Bangladesh*

Bangladesh is a developing country with a total population of 140 millions (Government of the People's Republic of Bangladesh, 2007; HRIRC, 2002). The Ministry of Health and Family Welfare (MOHFW) is responsible for formulating the

health policy in the country. The MOHFW implements antenatal and postnatal care services through Directorate General of Health Services (DGHS) and Directorate General of Family Planning (DGFP) from medical college hospitals to union sub-centers (HRIRC, 2002). Fifty-two percent of antenatal care women are covered by trained health care personnel such as doctors, nurses, and family welfare visitors (Mitra, 2009). There are different levels of health care providers under the Directorate General of Health Services and the Directorate General of Family Planning in Bangladesh. Obstetric-gynecologists, medical doctors, registered nurse-midwives, medical assistants, and family welfare visitors provide antenatal care in maternal health care services. For the objectives of this study, it is important to review the general context of antenatal care and factors relating to the quality of antenatal care in Bangladesh.

#### *Context of antenatal care in Bangladesh*

Bangladesh is one of the countries where maternal death is considered high. The government has struggled to lower the maternal mortality and morbidity by providing training and increasing antenatal care, but the desired outcome has not been achieved (Islam et al., 2005). According to the Bangladesh Demographic Health Survey 2007 (Mitra, 2009), 51% of pregnant women make only one visit to an antenatal care facilities, 17.8% of deliveries are assisted by trained health personnel, and 21.9% of women received postnatal care within 42 days after child birth. Due to short birth spacing and malnutrition, 50% of pregnant women suffer from anemia that may lead to maternal death (Chakraborty et al., 2003; Islam et al., 2005). Women are less interested in seeking antenatal care especially in rural areas (Islam et al). Sixty-nine percent of women do not receive any antenatal care during pregnancy. They do not

perceive antenatal care as an essential health care need for pregnant women (Chakraborty et al.) Some factors, such as distance from health facilities, long waiting time, misconception about traditional belief that childbirth is an act of God, and care provided by male doctor, make women reluctant to receive antenatal care services (Gayen & Raeside, 2007).

To enhance maternal health care, the Bangladesh Government established Emergency Obstetric Care (EmOC) services in 1993 with the support of UNICEF in selected Mother and Child Welfare Centers (Chowdhury et al., 2007; Islam, 2005). In addition, the government has committed to achieve the Millennium Development Goal Five refers to improve maternal health targeted to reduce 75% of MMR between 1990 and 2015 (Anwar et al., 2008; Khan & Kraemer, 2008), and to increase the assisted delivery rate up to 50% by the year 2010 (Bhuiyan et al., 2005). Based on this issue, the Bangladesh Nursing Council (BNC), (2009) stated in its report titled: Midwifery service in Bangladesh: assessment of the present situation and the future, that the slow rate of strengthening midwifery in Bangladesh is one of the major obstacles in achieving targeted Millennium Developmental Goals Four and Five that refers to reducing the infant mortality rate and improving maternal health, respectively.

There are several categories of trained health personnel providing maternal health care from primary to tertiary levels of health facilities: junior midwife, nurse-midwife, family welfare visitors, emergency obstetric care trained nurses, skilled birth attendants, and trained traditional birth attendants. Most of these health workers lack essential midwifery skills that are related to saving women's lives (BNC, 2009). However, some nurses provide antenatal care in public hospital. Their role in

antenatal clinic for healthy pregnant women is to register them in record book; take their history and examine their physical condition; identify risk factors; provide information about the danger signs of pregnancy, breastfeeding, nutrition, care of the newborn after delivery and advice to receive her tetanus toxoid injection. In addition, the nurses should establish good interpersonal relationships for awareness of their psychological well-being.

Nursing manpower in Bangladesh is not sufficient. There are only 23,000 registered nurses under Directorate of Nursing Services (DNS). DNS monitors and delivers nursing services and nursing education throughout the public settings (WHO, 2003; BNC, 2009). Of the 23,000 nurses only 1200 have a bachelor's degree, 150 a masters' degree, the remaining all holds a registered nurses/midwives diploma. At present, they are mainly working in public hospitals as multipurpose nurse-midwives in all nursing areas based on rotation duty roster (BNC). Rotation duty roster is the nurses' work schedule that may change in every 3, 4, or 6 months from one clinical area to another regardless of specialty. None works consistently in birthing places anywhere in the country. In addition, due to lack of defined job description and deployment policy for registered nurse midwives, there is little scope to develop expertise for a midwife to work in a dedicated midwifery services workforce in Bangladesh (BNC, 2009).

#### *Factors relating to quality of antenatal care in Bangladesh*

Structural factors influence the quality of antenatal care in Bangladesh. Among these are the setting, the care provider's knowledge and skill, her level of training, and interpersonal relationship with client (Boller et al., 2003). After receiving the care, pregnant women's satisfaction is a related factor of quality of antenatal care

(Uddin, Islam, & Ullah, 2006). Hasan et al. (2007) conducted a study to assess the level of women's satisfaction regarding maternal and child health services in Dhaka, Bangladesh. They found that 76.60% of the women were highly satisfied with the health facilities and the care provider's interpersonal support. In contrast, Chowdhury and colleague (2009) conducted a study in four union, four upazilla, four district and two tertiary level public health facilities to assess the perceived level of quality of maternal and newborn care in Bangladesh. They found, poor quality of care existed due to care provider and receiver dissatisfaction, inadequate technical competency, information exchange and follow-up services were strong barriers in regards to quality of care. Moreover, there was a shortage of nurses and other medical personnel in antenatal care services, and a lack of appropriate training programs for antenatal care influenced the quality care (Uddin et al., 2006). To access the antenatal care services under the family planning sector, family welfare assistants have been certified by Bangladesh Nursing Council as skilled birth attendants, and provide antenatal, intranatal and postnatal care in union and upazilla health complex (HRIRC, 2002).

In conclusion, in Bangladesh, antenatal care service coverage by trained health personnel is 52% from the tertiary to the grassroots level. But, nurses are not assigned to provide antenatal care in every level. Wherever nurses are assigned in the antenatal care unit, they are supposed to assess physical examination, provide health education about nutrition, risk factors, breastfeeding, and postnatal care to the normal pregnant women to promote maternal health.

### *Perceptions of Nurses and Pregnant Women Regarding Quality of Antenatal Care*

Perception regarding quality of care is the opinion and understanding in which antenatal caregiver and receiver organize and interpret the care given and received. Through understanding, pregnant women interpret their sensory impressions in order to select, evaluate, stimulate and give meaning to the environment and activities where the nurse provided care (Robbins & Coulter, 2005). Structural facilities of the settings, care provider's technical competency, their interpersonal relationship and their sociodemographic characteristics are related to the perceived quality of antenatal care. Usually perception in health care quality as well as in antenatal care is different between caregiver and receiver (Muntlin et al., 2006). To improve the quality of care, nurses need to review which factors related to the perception about quality care and which were perceived by them. In this study, the literature as reviewed as follows: (1) factors relating to the perceptions of quality care, (2) nurses' perceptions regarding quality of antenatal care, (3) pregnant women's perceptions regarding quality of antenatal care and (4) the difference in perceptions between nurse and pregnant women regarding quality of antenatal care as follows.

#### *Factors relating to the perceptions of quality care*

Factors are the attributes that influence the individual to perceive the environment or action. Structural facilities of setting, care provider's technical competency, and sociodemographic characteristics of both caregiver and receiver can influence perception of quality of care. Individual perception varies from person to person as high, low or satisfactory (Robbins & Coulter, 2005). Various studies mention that access to health facilities, health personnel's professional knowledge and skill, their good interpersonal relation with client, and their satisfaction all influence



in perception of quality of maternal health care (Boller et al., 2003; Hasan et al., 2007; Chowdhury et al., 2009). Similarly, the pregnant women's sociodemographic factors such as number of parity and living children were associated with perception about quality of antenatal care (Oladapo & Osiberu, 2009). Another study, assessed the level of women's satisfactions regarding maternal and child health services and found that 76.60% women perceived themselves highly satisfied with the care provider's technical and interpersonal care (Hasan et al., 2007). In contrast, lack of time during care, lack of patient's choice, using pressure to change behavior were main factors that influence on perception lowering the level of quality care (Murphy, 2007).

*Nurses' perceptions regarding quality of antenatal care*

Nurses' perceptions mean their opinion and understanding about the care they provided to pregnant women in antenatal clinics. Kaye, Mirembe, and Bantebya (2005) conducted a study to explore the nurse's and other health worker's perception on management of domestic violence during the antenatal period. They found that most of the nurses did not perceive domestic violence as a cause of ill health and did not know how to assess, identify, diagnose and manage the pregnant women during antenatal care. In the antenatal clinic negative personal attitudes, lack of technical competence, cultural stereotypes or institutional constraints act as the barriers to assist victims during pregnancy. Another study investigated the perception of nurses and clients in the antenatal care unit. It showed that, nurses' professional knowledge, skill, and working experience influence them to perceive quality of antenatal care. The results of this study found a statistically significant ( $p < .001$ ) perception level about the antenatal role perceived by the nurse (Kritcharoen et al., 2005). In addition, nurses perceived that some factors such as difficulty in getting an appointment, problems in

taking care of children, and lack of transportation are associated with less initiative on the part of pregnant women to perceive the quality of antenatal care (Rosebud et al., 1998).

*Pregnant women's perceptions regarding quality of antenatal care*

Pregnant women's perception means their opinion and understanding of the care received from nurse in antenatal clinic. Pregnant women perceive quality is a personal and dynamic perception extent to expected health care (Duong, Binns, Lee, & Hipgrave, 2004). They perceived that the care provider's behavior especially their politeness, respect to the patient and maintenance of privacy are more important than their technical competence, and the most accurate predictors for client satisfaction (Aldana et al., 2001). Most pregnant women perceived they had been informed about need of health information about breast feeding, newborn care, mothering activities, and common complications of pregnancy at the antenatal clinic (Bucha, William, Hayes, Morin, & Sylvia, 1997). Furthermore, a study in Nigeria about pregnant women's perception regarding quality of antenatal care, found that highly educated and upper class clients perceived that waiting time was too long. In addition, 90% of pregnant women responded that the health education, birth spacing, breast feeding, breast self examination, and danger sign of pregnancy information were provided by nurses and other health care providers in antenatal care unit. In contrast, 10% of the women did not receive any information about danger signs during pregnancy and breast self-examination. Almost 19.5% of the women reported that they did not receive any information from the health care provider about family planning. More than 94% of the women received health information about breast feeding. Most women (96.5%) expressed their satisfaction with the care they received and would

recommend the same clinic to their friends (Fawole et al., 2008). Some of the most common factors which cause the underutilization of ANC are: lack of women's autonomy, education of women and their husbands, availability of services, cost, family income, women's job, media exposure and previous experience of obstetric complications (Simkhada et al., 2007). Muntlin et al. (2006) conducted a study to identify the patient's perceptions regarding quality care in the emergency department. Patients perceived dissatisfaction due to unreasonably long waiting time, and unsatisfactory information received from nurse and physician. The patient mainly expects technical competence, positive attitudes, health information, a comfortable waiting room, maintenance of privacy and confidentiality. Similarly, another survey regarding quality of nursing care in a Turkish university hospital, reported the patient perceived their satisfaction as negative on reliability, sensitivity professional knowledge and good manners and empathy indicating the attitude of nursing care needs improvement in these areas (Ozge, 2001).

In conclusion, both the nurses' and the pregnant women's perceptions were their opinions and understandings about the care given by nurses to the pregnant women. The facilities of the settings, access to facilities, the care provider's technical and interpersonal competence, and pregnant women's sociodemographic characteristics have positive impact in the perception of antenatal care quality.

*The difference in perceptions between nurse and pregnant women regarding quality of antenatal care*

Perceptions regarding quality of antenatal care between nurses and pregnant women may differ due to individual's different understanding level of individuals (Robbins & Coulter, 2005). Nurse or other health care providers may perceive a

higher level than their clients. These findings are not surprising and are consistent with previous studies. Langer et al. (2002) and Nigenda et al. (2003) compared providers' (including physicians, nurses, and midwives) and patients' perceptions in four developing countries: Argentina, Cuba, Saudi Arabia and Thailand. They found that providers scored themselves higher than their patients did in relation to the information they provided during antenatal check-ups. Muntlin et al. (2006), aimed to identify the client's perceptions of quality of care at an emergency department and identification of areas for quality improvement. It showed that health care providers such as nurse's and physician's perceptions were different from the client's perception. Similarly, another study compared nurse-midwives' and clients' perceptions about actual and expected role of nurse-midwives in antenatal care, delivery care, postpartum care, and social and cultural care in southern Thailand. They found that nurse-midwives perceptions were higher than those of clients perception (Kritcharoen et al., 2005).

In conclusion, both nurses and pregnant women perceived quality of antenatal care from different aspects based on their personal and environmental characteristics. By measuring their perception level this study aimed to identify the discrepancy between nurses and pregnant women to improve nursing care in antenatal care services in order to meet the desired needs of pregnant women especially in Bangladesh.

*Summary*

According to this literature review, quality is now recognized as a planning tool for achieving effective and improved performance in antenatal service sectors. Quality of antenatal care is defined as the interactions between nurses and pregnant women based on client's needs related to present professional knowledge. Most of the studies were focused on technical and interpersonal dimensions of care proposed in Donabedian's structure-process-outcome model. Therefore, it is reasonable to identify the perceptions of nurses and pregnant women regarding quality in terms of technical care and interpersonal care. The nurse's role is to act in the antenatal clinic based on nursing process. Generally, nurses assess the pregnant women's physical condition, take history, perform a physical examination, and check laboratory tests; and they need to provide the pregnant women health information to maintain their health and that of their fetuses.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

The objectives of this research were to identify the level of nurses' perceptions and pregnant women's perceptions and compare the differences between these two group's perceptions regarding the quality of antenatal care. This chapter presented research design, settings, population and samples, instrumentation, ethical consideration, data collection and data analysis, respectively.

#### *Research Design*

A descriptive study was conducted with the aim to identify the level of perceptions and compare the differences between nurses' and pregnant women's perceptions regarding to the quality of antenatal care.

#### *Settings*

The study was conducted at eight medical college hospitals in Bangladesh from December, 2009 to February, 2010. There are 17 public medical college hospitals under the Ministry of Health and Family Welfare and one armed forces medical college hospital throughout the country (Government of the People's Republic of Bangladesh, 2009). Among these, eight settings were selected conveniently from five out of seven divisions of Bangladesh. The investigator selected eight settings to gain the most representative population (Appendix G). Eight hospitals were categorized into two parts as hospitals inside the capital of Bangladesh named Dhaka, and

hospitals outside the capital. Three hospitals inside the Dhaka city were (1) Dhaka Medical College Hospital (DMCH), (2) Sir Salimullah Medical College and Hospital, (SSMCH-1), and (3) Shaheed Shohrowardy Medical College Hospital, (SSMCH-2). Hospitals outside the city were (4) Chittagong Medical College Hospital, Chittagong, (5) Sher-e-Bangla Fazlul Haque Medical College Hospital, Barisal, (6) Rajshahi Medical College Hospital, Rajshahi, (7) Rangpur Medical College Hospital, Rangpur, and (8) Shaheed Ziaur Rahman Medical College Hospital, Bogra. All of those hospitals were qualified teaching hospitals of the Ministry of Health and Family Welfare, of the Government of the People's Republic of Bangladesh. Number of beds range between 500-1700, and number of nurses range from 200-630. Approximately 30 newly and followed-up pregnant women attended in antenatal care unit per day (outpatient department) and average 3-4 nurses work at antenatal care unit in each setting.

The nurses of these hospitals were working in various practice areas including antenatal care, in-patient units, as well as out-patient department (OPD), based on rotation. For these eight hospitals, the approximate numbers of nurses rotated to work at the antenatal care are 20 per year (Nursing Superintendents of DMCH, personal communication, August, 2009).

Generally, nurses who work at antenatal care units of these hospitals provide technical care and interpersonal care to the pregnant women. Nurses offer them to seat comfortably; register them and explain the procedure of examination; take obstetric history; perform physical examination including measure height, weight, blood pressure, fundal height; count fetal heart sound; assess anemia and edema; provide health education about nutrition, breastfeeding, newborn care and need of postnatal

care; and refer the pregnant women within the setting to a medical doctor for further management. According to these descriptions, the researcher assumes that the structure of care of those eight settings was quite similar. All hospitals are providing health education to the pregnant women such as nutrition, breast feeding, postnatal care, and newborn care. Therefore, the homogeneity of population and study samples were attained.

### *Population and Samples*

#### *Population*

Population was all nurses working at medical college hospitals antenatal care unit and all pregnant women who visited to receive antenatal care in medical college hospitals, Bangladesh. Target populations in this study were the nurses working at antenatal care and pregnant women who visited antenatal care in the 8 medical college hospitals.

#### *Samples*

The samples in this study included by all nurses and all pregnant women in these 8 medical college hospitals. The inclusion criteria to control confounding variables that may cause different perceptions for the nurses were: (1) at least diploma in midwifery, (2) at least 3 months work at antenatal care, and (3) work in antenatal care out patient department to provide technical and interpersonal care, and this duty roster has served in another ward within the year. The inclusion criteria for pregnant women were: (1) normal pregnancies, (2) gestational age  $\geq 28$  weeks, and (3) visit to the antenatal clinic at least once.



### *Sample size*

In this study, the number of subjects was estimated by using power analysis. In quantitative study, comparing differences between groups, power analysis is useful to determine the significance of the study findings (Polit & Beck, 2008). None of the previous studies directly compares the perceptions between nurses and pregnant women regarding quality of antenatal care. Therefore, the closest study (Kritcharoen et al., 2005) on perceptions of nurse-midwives and clients on nurse-midwives' roles was used to estimate the effect size. They compared the perception of roles of nurse-midwives in the antenatal unit, labor room, and post-partum ward between nurse-midwives and clients. Regarding antenatal role, the researchers found that nurse-midwives' perceptions mean score was 12.22 and SD = 7.07, and clients perceptions score mean was 14.94 and SD = 3.84. After calculation, the effect size of that study was .48. With this regard, an acceptable level of significance ( $\alpha$ ) .05, an expected power of .80 and an estimated effect size .50 ( $\gamma$ ). The sample size needed in each group was 50 (Cohen, 1988). Thus, in this study the sample size of nurses were 50 and for pregnant women 50 at the eight different settings. For simplicity, this number was rounded up to 56 so that 7 subjects/group were needed from each setting, yielding a total of 56 nurses and 56 pregnant women.

### *Sampling*

Nurses were selected by using simple random sampling and pregnant women were selected by using systematic random sampling. The researcher selected nurses by number drawing, and pregnant women were selected every 3 (1<sup>st</sup>, 4<sup>th</sup>, 7<sup>th</sup>) in the day of data collection until all samples from each setting were obtained.

## *Instrumentation*

### *Instruments*

The instruments used in this study were two identical questionnaires. Each questionnaire consisted of two parts: The first part a demographic questionnaire for nurses and pregnant women, second part was a quality of antenatal care questionnaire.

#### Part- 1 A: Demographic Questionnaire for nurses

The demographic questionnaire for nurses consisted of eight items: age, religion, marital status, educational level, monthly income, working experience in antenatal care (ANC), participation in any ANC training program, and job experience (Appendix A).

#### Part-1 B: Demographic Questionnaire for pregnant women

Demographic questionnaire for pregnant women were consisted of ten items including age, religion, marital status, educational level, occupation, monthly family income, gestational age, number of antenatal visits, number of parity, and number of living children (Appendix B).

#### Part-2: Quality of Antenatal Care Questionnaire (QACQ)

The researcher modified the Quality of Antenatal Care Questionnaire (QACQ) It was granted by e-mail permission (Appendix C) from the developers to modify their tool in this study. (Boller et al., 2003). There were 164 items in the original version (Boller et al., 2003). Structure of care contained 40 items regarding quality of antenatal care. Process of care contained 124 items based on its technical aspect and interpersonal aspect of quality of antenatal care. In their study, structural attributes of quality of antenatal care were measured by using a checklist and the process of quality was measured through observation. Therefore, the structural quality was not examined

in this study. Only the items regarding technical and interpersonal quality care were selected to modify, based on the Bangladesh health care context to make it relevant to the present study. Among the 124 items, there were some items under structure and pharmacological intervention that were not related to nursing care such as, prescribe iron supplement, administered tetanus toxoid injection. Therefore, the researcher modified only those items related to nursing care.

In this study, there were 65 items in the Quality of Antenatal Care Questionnaire; technical care 44 items, and interpersonal care 21 items. Technical care items were categorized into 21 assessment items and 23 health education items. Interpersonal care items were categorized into 21 psychological well-being items. The same version of QACQ was used for both nurses and pregnant women. For each item, the subjects were asked to rate nurses' activities on a 4-point Likert scale ranging from 0 = never did to 3 = always did (Appendix A). The total score range was 0-195. For interpretation, the total scores, the dimension scores and the sub dimension scores were categorized by using the range of the score (maximum–minimum) divided by the identified levels of 3 yielding the following three cut of scores (Table 2).

Table 2

*Score Range and Levels of Quality of Antenatal Care*

Quality of antenatal care	Items	Score range	Low	Moderate	High
Technical care	44	0-132	0.00-44.00	44.01-88.00	88.01-132
Assessment	21	0-63	0.00-21.00	21.01-42.00	42.01-63
Health education	23	0-69	0.00-23	23.01-46.00	46.01-69
Interpersonal care	21	0-63	0.00-21.00	21.01-42.00	42.01-63
Total Score	65	0-195	0.00-65.00	65.01-130.00	130.01-195

*Validity and reliability of the instruments*

*Validity of the instruments.* The English version of the instrument was examined for content validity by a panel of three experts. The first expert was an assistant professor of Midwifery Department, Prince of Songkla University, Thailand; the second expert was an advanced practice nurse in antenatal care unit in Songkla Hospital, Thailand; and the third a nurse educator, Nursing Institute, Mitford, Dhaka, Bangladesh. Each item was evaluated for relevancy with its related construct conceptual regarding quality of antenatal care.

*Reliability of the instruments.* The reliability of the instruments was analyzed for internal consistency by using Cronbach's alpha coefficient with 10 nurses and 10 pregnant women at 3 medical college hospitals in Dhaka (DMCH, SSMCH 1, and SSMCH 2) who met the study's inclusion criteria, but were not sample in this study. Cronbach's alpha coefficients were .87 for nurses' perceptions and .88 for pregnant women's perceptions. These findings were confirmed with the actual samples, yielding coefficient of .88 for nurses' perceptions and .94 for pregnant

women's perceptions. Cronbach's alpha coefficients were considered satisfactory for all variables regarding quality of antenatal care.

*Translation of the instruments.*

The instruments were translated into Bengali based on back translation procedure into three steps by bilingual experts (Sperder & Devellis, 1994). First, the original English version was translated into the Bengali by a Bangladeshi bilingual translator. Second, the Bengali version was back translated into English by another Bangladeshi bilingual translator. Finally, the two English versions were compared by an English expert of Sirajgonj University College, to check appropriate meaning and ensure the equivalence of the two versions.

*Modification of the instruments*

The instruments were modified into the Bengali before conducting the pilot and actual study. From the original English version, the words hemoglobin, albumin, and gas were translated into Bengali version as *lohito konika*, *amish*, and *batash*, respectively. During the pilot study, it was revealed that, these Bengali words were not commonly used and difficult to understand especially by the pregnant women. As a result, the English words 'hemoglobin' 'albumin' and 'gas' were used in the Bengali version to collect data from nurses and pregnant women.

*Ethical Consideration*

Ethics approval was obtained from the Research Ethics Committee, Faculty of Nursing, Prince of Songkla University (PSU), Thailand. After receiving permissions from PSU, the Directors, and the Nursing Superintendents of the study settings were asked for by the researcher to conduct the study. After approving by them, eligible

subjects were identified and informed about the purpose of the study and asked if they were willing to participate. Both groups of subjects received the same information but separate demographic items. The researcher ensured the nurses that their participation would have no consequences on their work. Each subject was informed about the confidentiality, anonymity, and their right to stop participation at any time without any compensation through a covered letter attached with the questionnaire. Informed written or verbal consent was obtained from all participants.

#### *Data Collection*

Data were collected by the researcher and 3 research assistants (RAs) during December, 2009 to February, 2010. The researcher collected data at five settings and the RAs collected at three settings from three regions, one RA at each setting. The following phases and steps were conducted:

- 1) Preparatory phase: In this phase, all permissions were granted from Directors and Nursing Superintendents of the settings, informing them the objectives of the study and procedures of data collection. The pilot study was conducted with 10 nurses and 10 pregnant women from three hospitals and aimed to determine the applicability of data collection procedure and testify to the reliability of the instruments. The researcher selected three research assistants who were master degree nursing students of PSU, Thailand, to collect data at three settings: Sher-e-Bangla Fazlul Haque Medical College Hospital, Barisal; Chittagong Medical College Hospital, Chittagong; and Rangpur Medical College Hospital, Rangpur; respectively. The researcher introduced herself as a researcher with three master degree nursing students and offered them to be a RAs. After getting their approval to be RAs one in

each setting, the researcher provided them guidelines about how and what to follow in collecting data that the researcher would follow in the implementing phase.

2) Implementing phase: In this phase, data were collected from five settings by researcher and from three settings by RAs. In five settings to collect data from the nurses, researcher communicated with the nursing superintendent to collect the list of all nurses who were working at the antenatal out patient department, and who moved to another wards within 1 year. The researcher distributed the questionnaire with the help of the charge nurse and gave them time to complete it within five days. The researcher collected all filled questionnaires and checked for missing data. Response rate was 100% without any missing item.

For the pregnant women, the researcher made another list of pregnant women who attended antenatal out patient department and determine the date for their next antenatal visit. They were approached and had explained to them the purpose of data collection. The researcher asked for their willingness to participate in the study. The researcher interviewed the pregnant women and explained them about how to fill out the questionnaire based on their own decision. It took about 30 minutes to complete the questionnaire. In case of illiterate subjects, the researcher read and filled out the questionnaire for them based on the pregnant women's opinion. Then researcher checked for missing data and asked them to complete the questionnaires. The researcher did not find any subject or items that they had not attempted to answer.

In three settings in another three regions, to collect data from the nurses and pregnant the researcher mailed the authorized documents to the heads of the settings. Questionnaires and consent forms were also mailed to pre-selected research assistants who followed the same procedures to select the samples and collect the data based on

the researcher's guideline that she followed in five settings. After finishing the data collection by RAs, they mailed back the filled questionnaires to the researcher. The researcher maintained confidentiality by using a code number for every participant.

### *Data Analysis*

Data were analyzed by using computer software. Demographic data were analyzed by descriptive statistics, using frequency, percentage, mean, and standard deviation. Inferential statistics, the Mann-Whitney U test and the independent t-test were used to compare the mean differences of perceptions regarding quality of antenatal care between two groups, nurses and pregnant women. Preliminary data analysis was conducted to test the assumptions of the independent t-test: normality and homogeneity of variance. Three outliers in the nurses' data set and one outlier in the pregnant women's data set were deleted. The decision was made to delete these outliers, yielding the final samples of 53 in nurses group and 55 in pregnant women group. However, data sets of the subdimension: interpersonal care was still non-normal. Therefore, these data sets were subsequently analyzed using the Mann-Whitney U test instead.



## **CHAPTER 4**

### **RESULTS AND DISCUSSION**

This descriptive study was conducted to identify the level of nurses' perceptions and pregnant women's perceptions and to compare both groups regarding the quality of antenatal care in Bangladesh. This chapter presents the results and discussion of this study as follows.

#### *Results*

The results of this study are presented in following sequences:

1. Characteristics of the sample
2. Nurses' perceptions regarding quality of antenatal care
3. Pregnant women's perceptions regarding quality of antenatal care
4. Comparison of perceptions regarding quality of antenatal care

#### *Characteristics of the Sample*

Fifty-six nurses who have experience in antenatal care, and 56 pregnant women who visited the antenatal care unit were selected from eight medical college hospitals. Seven nurses and seven pregnant women were selected from each hospital.

#### *Characteristics of the nurses*

In this study, the majority of nurses were more than 35 years old (87.5%) with a mean age 42.5 years. Most of them were Muslims (62.5%) and Hindus (33.9%). The majority were married (98.2%). With regard to educational level, most of them (80.4%) were Diploma in Nursing degree holders. More than half of them (51.8%)

had monthly family income 21,000-30,000 Taka (approximately US \$ 300 – 434). They have been in nursing for more than 10 years (80.4%) and have worked in antenatal care services more than 6 months (91.1%). Only one quarter (25%) had participated in an antenatal care training program (Table 3).

Table 3

*Frequency and Percentage of Nurses' Demographic Characteristics (n = 56)*

Characteristics	n	%
Age (M = 42.5, SD = 5.94, Min = 30, Max =54)		
≤35 years	7	12.5
36 - 40	18	32.1
41 - 45	11	19.7
46 - 50	17	30.3
51 - 54	3	5.4
Religion		
Muslim	35	62.5
Hindu	19	33.9
Buddhist	2	3.6
Marital status		
Married	55	98.2
Single	1	1.8
Educational level		
Diploma in Nursing	45	80.4
Bachelor of Nursing	10	17.8
Master in Nursing	1	1.8

Table 3 (Continued)

Characteristics	n	%
Monthly income (*Taka/US \$ approximately)		
≤20 thousands (US \$ < 290 )	19	28.6
21-30 (US \$ 300 - 430)	29	51.8
31- 40 (US \$ 450 - 570 )	9	16
>40 (> US \$ 450 - 570 )	2	3.6
Working experience in ANC		
≤ 6 months	5	8.9
7-12 months	28	50.0
>1year	23	41.0
Number of training program participated in ANC		
Yes	14	25.0
No	42	75.0
Job experience		
6 - 10 years	11	19.6
11 - 15 yrs	17	30.4
>15 yrs	28	50.0

(\*Approximately US \$ 100 = 7,000 Taka)

#### *Characteristics of the pregnant women*

The majority of pregnant women were 21-35 years old (94.6%) and their mean age was 25.27 years. All of them were married (100%) and almost were Muslims (82.1%). With regard to educational level, most of pregnant women were either had no formal education or primary or secondary school (89.3%). Ninety-six point four percent were housewives, and for more than half (57.1%), their family income was less than 10,000 Taka in Bangladesh (approximately US \$ 140). In regard to the

gestational age of the pregnant women, 62.5% were 32 weeks pregnant or more and most made at least three antenatal visits (82.1%). Their parity was at least second (75.0%) and 73.2% had at least one living child (Table 4).

Table 4

*Frequency and Percentage of Pregnant Women's Demographic Characteristics*

(n = 56)

Characteristics	n	%
Age ( M = 25.27, SD = 4.58, Min = 18, Max = 38)		
≤20 years	1	1.8
21-25	5	8.9
26-30	27	48.2
31-35	21	37.5
36 - 38	2	3.6
Religion		
Muslim	46	82.1
Hindu	10	17.9
Marital status		
Married	56	100.0
Education level		
No education	4	7.1
Primary school	25	44.7
Secondary School (SSC)	21	37.5
> SSC	6	10.7
Occupation		
Housewife	54	96.4
Working outside	2	3.6

Table 4 (Continued)

Characteristics	n	%
Monthly income (*Taka/US \$ approximately)		
<10 thousands (US \$ < 140 )	32	57.1
10-15 (US \$ 140 - 215)	21	37.5
16-20 (US \$ 230 - 290 )	1	1.8
>20 (US \$ > 290 )	2	3.6
Gestational age		
<32 wks	21	37.5
32 – 36	16	28.6
>36	19	33.9
Number of antenatal visits		
Second	10	17.9
Third	20	35.7
Fourth	19	33.9
>Fourth	7	12.5
Number of parity		
First	14	25.0
Second	24	42.9
Third	17	30.3
> Third	1	1.8
Number of living children		
None	15	26.8
One	24	42.8
Two	16	28.6
>Two	1	1.8

(\*Approximately US \$ 100 = 7,000 Taka)

*Nurses' Perceptions Regarding Quality of Antenatal Care*

The total scale of nurses' perceptions regarding quality of antenatal care was at a high level (M = 176.95, SD = 16.07), with the minimal and maximal scores were 122 and 195 respectively. Similarly, the subscale namely technical care and interpersonal care, were found to be high (M = 116.18, SD = 14.74; M = 60.77, SD = 2.58). In addition, the technical care subscale which consists of assessment and health education, the results were found also to be high (M = 51.59, SD = 10.80; M = 64.59, SD = 5.57) (Table 5).

Table 5

*Means, Standard Deviations, and Level of Nurses' Perceptions Regarding Quality of Antenatal Care (n = 56)*

Quality of antenatal care	Possible scores	Min	Max	M	SD	Level
Technical care	0 - 132	70	132	116.18	14.74	High
Assessment	0 - 63	23	63	51.59	10.80	High
Health education	0 - 69	45	69	64.59	5.57	High
Interpersonal care	0 - 63	52	63	60.77	2.58	High
Total scale	0 - 195	122	195	176.95	16.07	High

*Pregnant Women's Perceptions Regarding Quality of Antenatal Care*

The total scale of pregnant women's perceptions regarding quality of antenatal care was also at a high level (M = 162.71, SD = 24.70). The minimal and maximal scores were 65 and 195 respectively. Similarly the subscale, namely technical care

and interpersonal care were found to be high ( $M = 106.55$ ,  $SD = 18.74$ ;  $M = 56.16$ ,  $SD = 7.25$ ). In addition, the technical care subscale, which consists of assessment and health education, the result were found also to be high ( $M = 46.85$ ,  $SD = 12.66$ ;  $M = 59.70$ ,  $SD = 8.92$ ) (Table 6).

Table 6

*Means, Standard Deviations and Level of Pregnant Women's Perceptions Regarding Quality of Antenatal Care (n = 56)*

Quality of antenatal care	Possible score	Min	Max	M	SD	Level
Technical care	0 - 132	37	132	106.55	18.74	High
Assessment	0 - 63	18	63	46.85	12.66	High
Health education	0 - 69	19	69	59.70	8.92	High
Interpersonal care	0 - 63	28	63	56.16	7.25	High
Total scales	0 -195	65	195	162.71	24.70	High

*Comparison of Perceptions Regarding Quality of Antenatal Care*

Perceptions of nurses and pregnant women regarding quality of antenatal care were compared based on its two aspects: (1) comparison of perceptions regarding quality of antenatal care between nurses and pregnant women, and (2) comparison of perceptions regarding quality of antenatal care between nurses inside Dhaka and outside Dhaka; and between pregnant women inside Dhaka and outside Dhaka as follows.

*Comparison of perceptions regarding quality of antenatal care between nurses and pregnant women*

The nurses' perceptions of quality of antenatal care (the total scale) was significantly higher than that of the pregnant women's perceptions (M = 179.45 vs. M = 164.49  $t = 4.50$ ,  $p < .001$ ). In addition, the subscale namely technical care the nurses' perceptions was significantly higher than that of the pregnant women's perceptions (M = 118.49 vs. M = 107.82,  $t = 3.97$ ,  $p < .001$ ) (Table 7). Similarly to another subscale namely interpersonal care, the nurses' perceptions was significantly higher than that of the pregnant women (M = 68.07 vs. M = 41.43,  $Z = 4.47$ ,  $p < .001$ ) (Table 8).

Table 7

*Comparison of Perceptions Regarding the Total Scale and Subscale of Quality of Antenatal Care Between Nurses and Pregnant Women*

Quality of antenatal care	Nurse (n = 53)		Pregnant women (n = 55)		<i>t</i>	<i>p</i> -value
	M	SD	M	SD		
Subscale:						
Technical care	118.49	11.28	107.82	16.33	3.97	.000***
Total scale	179.45	12.26	164.49	21.1	4.50	.000***

\*\*\* $P < .001$



Table 8

*Comparison Between Nurse's Perceptions and Pregnant Women's Perceptions Regarding Interpersonal Care*

Quality of antenatal care	Nurse (n = 53)			Pregnant women (n = 55)			Z	p-value
	Mean rank	Min	Max	Mean rank	Min	Max		
Subscale: Interpersonal care	68.07	54	63	41.43	36	63	4.47	.000***

\*\*\* P < .001

*Comparison of perceptions regarding quality of antenatal care between nurses inside Dhaka and outside Dhaka; and between pregnant women inside Dhaka and outside Dhaka*

The nurses' perceptions regarding the quality of antenatal care between the nurses inside Dhaka and outside Dhaka were not significant (M = 181.48 vs. M = 178.13,  $t = .973$ ,  $p > .05$ ) (Table 9). In addition, the pregnant women's perceptions regarding quality of antenatal care between pregnant women outside Dhaka were significantly higher than that of the pregnant women inside Dhaka (M = 171.85 vs. M = 152.57,  $t = 3.67$ ,  $p < .01$ ) (Table 10).

Table 9

*Comparison of Nurses' Perceptions Regarding Total Quality of Antenatal Care Between Hospital inside Dhaka and outside Dhaka*

Total quality of antenatal care	Inside Dhaka (n =21)		Outside Dhaka ( n = 32)		<i>t</i>	<i>p</i> -value
	M	SD	M	SD		
Nurses' perceptions	181.48	12.61	178.13	12.04	.973	.335

$P > .05$

Table 10

*Comparison of Pregnant Women's Perceptions Regarding Total Quality of Antenatal Care Between Hospital inside Dhaka and outside Dhaka*

Quality of antenatal care	Inside Dhaka (n =21)		Outside Dhaka (n = 34)		<i>t</i>	<i>p</i> -value
	M	SD	M	SD		
Pregnant women's perceptions	152.57	19.36	171.85	18.68	3.67	.001**

\*\*  $P < .01$

### *Discussion*

This descriptive study aimed to identify and compare the level of nurses' perceptions and pregnant women's perceptions regarding quality of antenatal care. The discussion focuses on three parts: (1) nurses' perceptions regarding quality of antenatal care, (2) pregnant women's perceptions regarding quality of antenatal care, and (3) comparison of perceptions regarding quality of antenatal care as follows.

### *Nurses' Perceptions Regarding Quality of Antenatal Care*

In this study, the level of nurses' perceptions regarding total quality of antenatal care and its subscales, technical care and interpersonal care, was high (Table 5). Several reasons may be supported by this finding including structure of hospital, duration of job experience and working experience in antenatal care unit, nurses' educational level and antenatal care training program. More details are as follows.

First, in this study, nurses provided their antenatal care from the tertiary level medical college hospitals which are structurally different from other district and upazilla hospitals. Nurses who are working in medical college hospitals have many facilities such as staffing, laboratory investigation, separate room for physical check-up, and provision of health education, that encourage them to perform their nursing care always in the antenatal care unit. Structural factors influenced nurses to perceive a high level quality of antenatal care. This finding was consistent with the previous study conducted in Dhaka, Bangladesh, to assess the level of women's satisfaction, and health facilities regarding maternal and child health services (Hasan et al., 2007). It revealed that facilities of the settings were easily accessible and care providers were able to provide a high quality of care to satisfy their clients. Another study (Boller et al., 2003) compared public and private providers about the structure and process of quality of antenatal care in the United Republic of Tanzania. They showed that both public and private providers were reasonably good in the structural and interpersonal quality of antenatal care. Thus, good facilities of the hospitals make nurses perceive that they did a good job.

In health care policy, the Bangladesh government has planned to enhance maternal health care and committed to achieve the Millennium Development Goal

Five (MDG5) at a decline of 75% in the maternal death rate between the years 1990 and 2015 (Anwar et al., 2008; Khan & Kraemer, 2008). To achieve this goal, nurses perform best service possible. In addition, according to hospital policy, nurses can assess and provide health information about nutrition, birth spacing, newborn care and breastfeeding in the antenatal health education class independently. Therefore, nurses perceived they provide high quality technical and interpersonal care

Second, duration of job experience and working experience in the antenatal care unit may contribute to develop the nurse's skill and practice. In this study, 80.40% of nurses have more than 10 years job experience and 91.10% of them have worked more than 6 months in antenatal care services. This long term experience may enhance nurses' skills and attitudes towards their abilities in performing professional activities as well as antenatal care services for the pregnant women. Thus lengthy experience in nursing services, particularly experience in antenatal care unit, developed nurses' competency dealing with pregnant women and they provided high quality care to their clients.

Finally, nurses' education above diploma level (19.6%) and participation in antenatal care training programs (25%) might encourage them to refresh and up-grade their professional knowledge and practice to improve care in the antenatal care services in Bangladesh. The high level of perceptions of nurses in this study was supported by previous studies which found that quality of antenatal care is closely linked to the quality of the health care personnel. Their professional knowledge, working experience, and training program influenced positively on nurse's perception regarding quality of antenatal care (Boller et al., 2003; Kritcharoen et al., 2005). Based on the review, findings of this study were congruent with previous study. In

contrast, nurses and other care provider's perceived maternal health care quality were lower in Bangladesh (Chowdhury et al., 2009).

Even though nurses perceived themselves providing a high level quality of antenatal care, but there are some items in the subscale technical care, item number 14 (measured fundal height), 16 (checked fetal heart sound), 17 (examined presentation of fetus), 18 (checked urine for albumin test), and 19 (checked urine for sugar test) mean scores are at moderate level. In addition, average more than 32% of the nurses perceived about these items at low level (Appendix F). Among the general antenatal care and counseling issues, the nurse should perform the routine fetal heart auscultation, urine analysis for albumin and sugar, and measure fundal height to assess the gestational growth (Kirkham et al., 2005). Through these care, nurses may contribute to achieve millennium goal four and five that refers to reducing infant mortality rate and improving maternal health.

#### *Pregnant Women's Perceptions Regarding Quality of Antenatal Care*

The level of pregnant women's perceptions regarding quality of antenatal care was at high level (Table 6). It implies that they were receiving high quality of antenatal care service from the nurses. Several reasons may support for their high perceptions, including clients' satisfaction, access of facilities from tertiary level hospitals, and sociodemographic characteristics. More details are as follows.

First, client satisfaction an important determinant to assess the quality of care that influences pregnant women to perceive a high level. Findings in this study may be due to the fact that nurse's performance meets the pregnant women's satisfaction by providing client centered technical and interpersonal care that met their needs. In

this study, knowledgeable skilled nurses were able to satisfy the pregnant women by providing comfort, building a good relationship to make them feel psychologically comfortable, maintaining their privacy during consultancy and respecting their autonomy by asking permission for examination. These kinds of nurses' actions in the antenatal clinic might consider pregnant women that nurses always perform good work. Some factors during antenatal care such as, client centered care, nurse's knowledge and technically skilled, known personnel especially in subsequent visits, nurses' provision of health information, a comfortable waiting room and maintaining privacy contribute to a high perception making the client of psychological comfort and satisfaction (Muntlin et al., 2006; Murphy, 2007). The findings of this study are consistent with previous study conducted in Bangladesh and showed that in health care quality the care provider's behavior, showing respect to client's autonomy, and maintenance of privacy are more important issues in satisfying the clients and influenced them to perceive a high quality of care (Aldana et al., 2001). Similarly, another study assessed the level of women's satisfaction regarding maternal and child health services in Dhaka, Bangladesh. It revealed that 76.60% women were highly satisfied with the care provider's interpersonal support and perceived as high (Hasan et al., 2007). In addition, Fawole et al. (2008) aimed to assess pregnant women's perception about quality of antenatal care and found that more than 96% of pregnant women perceived that they received quality of antenatal care from nurses and other health personnel that were able to meet their satisfactions.

Second, access of facilities of antenatal care from tertiary level hospitals provides standard care for pregnant women. The environment of the hospital, competent staff and available laboratory facilities of the tertiary level hospital allows

nurses to perform their actions to meet pregnant women's needs that influenced them to perceive high. Previous study found that access of facilities of maternal health care influence clients to perceive a high quality of maternal and child health care in Dhaka, Bangladesh (Hasan et al., 2007). Based on this interaction, pregnant women had high perception that nurses always performed competently.

Lastly, some demographic reasons may influence the pregnant women to perceive at high levels. In this study, gestational age of pregnant women, frequency of antenatal visits and their number of parity may influence the findings. Due to these demographic reasons pregnant women were experienced to understand nurses' performance in antenatal care setting. In this study, nearly two-thirds of pregnant women (62.50%) had a gestational period of 32 weeks and most of them (82.10%) had completed their third antenatal visit, and 75% were not primipara. These data indicated that the pregnant women had experience in receiving antenatal care; it gave them better understanding to perceive at high. In addition, educational level and occupation influenced this finding. Most of pregnant women (89.3%) were either had no formal education or had attended primary or secondary school; most were (96.4%) housewives. Usually, these factors may influence them not to have high expectation, and whatever they received they felt satisfied, and perceived nurses activities at high level. Kritcharoen et al. (2005) found that nurse-midwives' actual role in antenatal care as perceived by the client were higher than that of nurses. More education, socioeconomic conditions and occupation may influence perception of quality care based on better understanding and higher expectations. If clients be highly educated and do services, they perceive differently than those don't. Fawole et al. (2008) found that high educated and upper socioeconomic classes' perceived waiting time in

antenatal care was so long whereas low educated perceived as norm at antenatal care service in Nigeria. In contrast, nurse pregnant women ratio, long waiting time, spending time during visit, educational level of pregnant women would be influencing factors to perceived quality of antenatal care as a low level (Fawole et al., 2008).

In the findings of this study, although the pregnant women were agree with nurses' high perceptions that, they always perform their activities at antenatal clinics. But there are some items in subscale technical care, item number 7 (measure the height), 9 (measure the pulse rate), 12 (examine the breasts and nipples), 13 (observe abdominal abnormality), 34 (showed the correct position to hold their babies), 36 (provided information about burping the baby after breast feed), and 39 (provided information about care of baby's umbilical cord) mean scores are at moderate level. In addition, average 41.0% of the pregnant women perceived about these items at low level. Moreover, subscale interpersonal care about maintaining privacy; item number 50 (close the door during consultation) 44.6% women perceived it at low level (Appendix F). Bucha et al. (1997) found that at antenatal clinics pregnant women need the information related to mothering activities. Information about breast feedings and newborn care classes were the most frequently identified needed mothering activities that the nurse should provide in antenatal clinics especially for the primiparas. In addition, maintenance of privacy are more important issues that nurses should follow at antenatal clinic that influence the pregnant women to perceive a high quality of care (Aldana et al., 2001).



### *Comparison of Perceptions Regarding Quality of Antenatal Care*

Perceptions of nurses and pregnant women regarding quality of antenatal care were compared based on its two aspects: (1) comparison of perceptions regarding quality of antenatal care between nurses and pregnant women, and (2) comparison of perceptions regarding quality of antenatal care between nurses inside Dhaka and outside Dhaka; and between pregnant women inside Dhaka and outside Dhaka as follows.

#### *Comparison of perceptions regarding quality of antenatal care between nurses and pregnant women*

In this study, although nurses and pregnant women were rated at high level of quality of antenatal care, there were statistically significant differences between the mean total and dimension scores of nurses' perceptions regarding the quality of antenatal care, and the mean total and dimension scores of pregnant women's perception regarding quality of antenatal care (Table 7). These findings are not surprising and are consistent with previous studies found that providers scored themselves higher than their patients in relation to the information they provided during antenatal check-ups (Langer et al., 2002; Nigenda et al., 2003). Similarly, Muntlin et al. (2006) aimed to identify the client's perceptions of quality of care at an emergency department and indicated areas for quality improvement. The study showed that, the perceptions of health care providers such as nurses' and physicians were different from those of their clients. In addition, Kritcharoen et al. (2005) compared nurse-midwives' and clients' perceptions of nurse-midwives' actual and expected roles in antenatal care, delivery care, postpartum care, and social and

cultural care in southern Thailand. They found that nurse-midwives' perceptions were higher than those of the clients.

In this finding, nurse perceived high quality of care caused by individual differences based on nurses' education and professional background. Nurse performs some activities for reasons not understood by the pregnant women. On the other hand, pregnant women perceived the level of care they received lower than the nurses perceived. The discrepancy might be caused by the pregnant women's lower educational status. Eighty-nine point thirty percent of pregnant women either had no formal education or had attended only primary or secondary school. It indicated that they lack sufficient knowledge of nursing science to perceive the reason for all of the nursing activities that they received. Therefore, their perceptions differed from the nurses' perceptions regarding the quality of antenatal care.

*Comparison of perceptions regarding quality of antenatal care between nurses inside Dhaka and outside Dhaka; and between pregnant women inside Dhaka and outside Dhaka*

To compare the perceptions of both groups nurses and pregnant women regarding quality of antenatal care, the settings were grouped into two categories: (1) hospitals inside Dhaka, and (2) hospitals outside Dhaka. The nurses' perceptions regarding the quality of antenatal care between the hospitals inside Dhaka and outside Dhaka were not significantly difference (Table 9). It may cause the homogeneity of the settings. All nurses from hospital inside and outside Dhaka provided antenatal care based on their equal competent professional knowledge and skill, and from structurally equal health facilities. On the other hand, the pregnant women's perceptions regarding quality of antenatal care between hospitals outside Dhaka were

significantly higher than that of the hospitals inside Dhaka (Table 10). It may cause of due to high expectation and education of pregnant women who live inside Dhaka than the women live outside of Dhaka. Previous study found that, upper socio-economic class women perceived waiting time in antenatal care was too high that influence to perceive low quality of antenatal care (Fawole et al., 2008).

## CHAPTER 5

### CONCLUSION AND RECOMMENDATION

The descriptive study was conducted to identify the levels and to compare the perceptions between nurses and pregnant women regarding quality of antenatal care in Bangladesh. Eight medical college hospitals from five out of seven divisions of Bangladesh were settings that conveniently selected. Fifty-six nurses and 56 pregnant women were recruited by using simple random and systematic random sampling, respectively. Instruments in this study were two identical questionnaires with two parts. Firstly, Part 1 Demographic Questionnaire for subjects, secondly, Part 2 a modified Quality of Antenatal Care Questionnaire (QACQ) (Boller et al., 2003). The QACQ consists of 65 items into two subscales namely, technical care and interpersonal care. A panel of three experts examines content validity to construct the instrument. Its reliability was tested, acceptance level in Cronbach's alpha were .87 in the pilot study and .88 in the actual study for nurses; and .88 in the pilot study and .94 in the actual study for pregnant women. Data were collected by the researcher and her assistants after receiving the consent from subjects. Data were analyzed by using descriptive and inferential statistics after deleting outliers' cases by computer software.

#### *Conclusion*

There were two groups of subjects in this study: nurses and pregnant women. They have different demographic information and different types of perception level regarding quality of antenatal care in Bangladesh. In terms of nurses' demographic

information, majority of nurses were more than 35 years old (87.50%) with a mean age of 42.5 years. Most were married (98.20%) and Diploma in Nursing holders (80.40%). Most nurses had worked for more than 10 years (80.40%); and had more than 6 months' working experience in antenatal care services (91.10%). In the other group, the majority of pregnant women were 20-35 years old (94.60%) with a mean age of 25.27 years. Most of pregnant women had either no formal education or primary or secondary school attendance (89.30%); almost all were housewives (96.40%); 62.50% of the women had a gestational age of 32 weeks or more; and 82.10% women had made at least three antenatal visits.

The total scale of nurses' perceptions regarding quality of antenatal care was high ( $M = 176.95$ ,  $SD = 16.07$ ). Similarly, its technical care and interpersonal care were found to be high ( $M = 116.18$ ,  $SD = 14.74$ ;  $M = 60.77$ ,  $SD = 2.58$ ). Several reasons including structure of hospital, duration of job experience, nurses' working experience in antenatal care unit, their educational level, and training program may be influence to perceive at high. On the other hand, the total scale of pregnant women's perceptions regarding quality of antenatal care was also at a high level ( $M = 162.71$ ,  $SD = 24.70$ ); and its subscale technical care and interpersonal care were also found to be high ( $M = 106.55$ ,  $SD = 18.74$ ;  $M = 56.16$ ,  $SD = 7.25$ ). In addition, the technical care subscale for assessment and health education, and the results of nurses and pregnant women were also found at high level.

Although the findings of nurses and pregnant women's perceptions regarding quality of antenatal care were at high level, the nurses' perceptions was significantly higher than that of the pregnant women ( $M = 179.45$  vs.  $M = 164.49$   $t = 4.50$ ,  $p < .001$ ). In addition, in the subscales for technical care and interpersonal care, the

nurses' perceptions were significantly higher than those of pregnant women ( $M = 118.49$  vs.  $M = 107.82$ ,  $t = 3.97$ ,  $p < .001$ ); ( $M = 68.07$  vs.  $M = 41.43$ ,  $Z = 4.47$ ,  $p < .001$ ). In terms of different perceptions of nurses and pregnant women between the hospitals inside and outside Dhaka, it was found that nurses' perceptions inside Dhaka were not significantly different ( $M = 181.48$  vs.  $M = 178.13$ ,  $t = .973$ ,  $p > .05$ ); and pregnant women's perceptions outside Dhaka were significantly higher than those for the hospitals inside Dhaka ( $M = 171.85$ , vs.  $M = 152.57$ ,  $t = 3.67$ ,  $p < .01$ ).

#### *Implication and Recommendation*

The findings of this study may imply and recommend continuation of the existing standard of quality care and further improvement in the nursing professions and nursing services as follows.

##### *Implication*

This study may have implications for several areas of nursing programs including: (1) nursing practice, (2) nursing education, and (3) nursing research for further improvement of antenatal care services.

*Nursing practice.* The findings of this study may be used in nursing practice. Through the dissemination of findings such as calling general meetings among the nurses working in antenatal clinics, arranging workshops with nursing leaders and policy makers, and publishing in nursing newsletters or journals, the researcher would like to point out the areas for improving existing nursing practice in antenatal care services.

*Nursing education.* The findings of this study may have implications for the nursing curriculum in maternal and child health nursing. The researcher would

like to point out the areas that nursing students need to prepare themselves in modern nursing education and technology to provide quality care in antenatal care services comparative with other countries. In addition, through in-service education nurses may expand their knowledge and skill to improve antenatal care services.

*Nursing research.* Results of this study may be used as a source of information for future research.

#### *Recommendation*

Based on the findings, the researcher would like to recommend three areas: (1) continue the quality of existing practice that found in this study and improve the standard of antenatal care; (2) point out the items that nurses (item number 14, 16, 17, 18 and 19) and pregnant women (item number 7, 9, 12, 13, 34, 36, 39 and 50) (Appendix F) perceived at moderate level in order to improve the quality of antenatal care at high level, and decrease the frequency of subjects who perceived these items as low level through encouraging nurses to perform; and (3) further in-depth interview and qualitative study may be needed to explore the actual perceptions of nurses and pregnant women regarding the quality of antenatal care in Bangladesh.

In addition, through the specialized course of nurse-midwives, in-service education and antenatal care training programs; nurses need to develop the professional knowledge and skill in antenatal care services. It would satisfy the pregnant women and meet their needs during pregnancy by providing technical and interpersonal quality of antenatal care. As a result, it would contribute to narrowing the discrepancies found between the nurses' perceptions and pregnant women's perceptions regarding quality of antenatal care in this study.

### *Strengths and Limitations*

This study is the initial study conducted in Bangladesh comparing nurses' perceptions and pregnant women's perceptions regarding quality of antenatal care. There were strength and limitations in this study that discussed as follows.

#### *Strengths*

This study was conducted in eight medical college hospitals, selected from five out of seven divisions in the country. It indicated that the samples a good representative population of the country. In addition, using random sample technique, and collecting data from 5 settings by the researcher strengthened the accuracy of findings.

#### *Limitations*

In spite of strength points, this study has limitations: (1) selection of only public and medical college hospitals settings, and (2) use of self-report methods.

*Selection of only public and medical college hospitals settings.* The eight hospitals in this study were all public and medical college hospitals. This may limit the ability to generalize the findings to private and non-medical college hospitals.

*Use of self-report methods.* The self-report method used to collect the data also has some weaknesses. The most serious concern of using self-report concerns to the validity and accuracy of the collected data: whether subjects feel or act the way they actually do (Polit & Beck, 2004). In self-report, nurses may respond to the questionnaire in such a way that would make them look good.



## REFERENCES

- Al-Ahmadi, H., & Roland, M. (2005). Quality of primary health care in Saudi Arabia: A comprehensive review. *International Journal for Quality of Health care*, 17, 331-345.
- Aldana, J. M., Piechulek, H., & Al-Sabir, A. (2001). Client satisfaction and quality of health care in rural Bangladesh. *Bulletin of the World Health Organization*, 79, 512-517.
- Anwar, I., Sami, M., Akhtar, N., Chowdhury, M. E., Salma, U., Rahman, M., & et al., (2008). Inequity in maternal health-care services: Evidence from home-based skilled-birth attendant programmes in Bangladesh. *Bulletin of the World Health Organization*, 86, 252-259.
- Bangladesh Nursing council. (2009). *Midwifery services in Bangladesh: Assessment of the present situation and the future*. Engender Health Bangladesh Country office, Dhaka, Bangladesh.
- Bhuiyan, A. B., Mukharjee, S., Acharya, S., Haider, S. J., & Begum, F. (2005). Evaluation of the skilled birth attendant pilot training program in Bangladesh. *International Journal of Gynecology and Obstetrics*, 90, 56-60.
- Blumenthal, D. (1996). Quality of care - what is it? *The New England Journal of Medicine*, 335, 891-894.
- Boller, C., Wyss, K., Mtasiwa, D., & Tanner, M. (2003). Quality and comparison of antenatal care in public and private providers in the United Republic of Tanzania. *Bulletin of the World Health Organization*, 81, 116-122.

- Brown, C. R. (2007). Where are the patients in the quality of health care?  
*International Journal for Quality in Health Care, 19*, 125-126.
- Brown, A., & Muhajarine, N. (2006). Antenatal depression nurses who understand the prevalence, signs and symptoms, and risk factors associated with antenatal depression (AD) can play a valuable role in identifying AD and preventing the sequelae in pregnant women and their families. *Canadian Nurse, 102*, 27-30.
- Bucher, L., Williams, S., Hayes, E., Morin, K., & Silvia, B. (1997). First-time mothers perceptions of prenatal care services. *Applied Nursing Research, 10*, 64-71.
- Campbell, S. M., Ronald, M. O., & Buetow, S. A. (2000). Defining quality of care. *Social science & Medicine, 51*, 1611-1625.
- Chakraborty, N., Islam, M. A., Chowdhury, R. I., & Bari, W. (2003). Analysis of ante-partum maternal morbidity in rural Bangladesh. *Australian Journal of Rural Health, 11*, 22-27.
- Chowdhury, R. I., Islam, M. A., Gulshan, J., & Chakraborty, N. (2007). Delivery complications and health care seeking behavior: The Bangladesh demographic Health Survey, 1999-2000. *Health and Social Care in the Community, 15*, 254-264.
- Chowdhury, S., Hossain, S. A., & Halim, A. (2009). Assessment of quality of care in maternal and newborn health services available in public health care facilities in Bangladesh. *Bangladesh Medical Research Council Bulletin, 35*, 53-56.
- Chunuan, S. K. (2002). *Patient satisfaction with health care services received during intrapartum in one regional hospital in the Southern part of Thailand*. Unpublished doctoral dissertation. University of Kentucky. USA.

- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Duong, D. V., Binns, C. W., Lee, A. H., & Hipgrave, D. B. (2004). Measuring client-perceived quality of maternity services in rural Vietnam. *International Journal for Quality in Health Care*, *16*, 447-452.
- Donabedian, A. (1966). Evaluating the quality of medical care. *The Milbank Memorial Fund Quarterly*, *44*, 166-203.
- Donabedian, A. (1980). *Explorations in quality assessment and monitoring*. Ann Arbor, MI: Health Administrator Press.
- Donabedian, A. (1988). Quality assessment and assurance: Unity of purpose, diversity of means. *Inquiry*, *25*, 173-192.
- Donabedian, A. (2005). Evaluating the quality of medical care. *The Milbank Quarterly*, *83*, 691-729.
- Eldar, R. (1999). Quality of care in rehabilitation medicine. *International Journal for Quality in Health Care*, *11*, 73-79.
- Fawole, A. O., Okunlola, M. A., & Adekunle, A. O. (2008). Client's perceptions of the quality of antenatal care. *Journal of the National Medical Association*, *100*, 1052-1058.
- Gallagher, R. M. (2005). National quality efforts: What continuing and staff development educators need to know. *The Journal of Continuing Education in Nursing*, *36*, 39-45.
- Gayen, K., & Raeside, R. (2007). Social networks, normative influence and health delivery in rural Bangladesh. *Social Science & Medicine*, *65*, 900-914.

- Government of the People's Republic of Bangladesh. (2007). *Health Bulletin*, Directorate General of Health Services, Dhaka-1212, Bangladesh.
- Government of the People's Republic of Bangladesh. (2009). *Health Bulletin*, Directorate General of Health Services, Dhaka-1212, Bangladesh.
- Glickman, S. W., Baggett, K. A., Krubert, C. G., Peterson, E. D., & Schulman, K. A. (2007). Promoting quality: The health-care organization from a management perspective. *International Journal for Quality in Health Care*, 19, 341-348.
- Green, C. J., & Wilkinson, J. M. (2004). *Maternal newborn nursing care plans* (1st ed.). United States of America: Mosby.
- Hasan, A., Chompikul, J., & Bhuiyan, S. U. (2007). Patient satisfaction with maternal and child health services among mothers attending the maternal and child health training institute in Dhaka, Bangladesh. *Journal of Public Health and Development*, 5, 23-33.
- Higashi, T., Wenger, N. S., Adams, J. L., Fung, C., Roland, M., McGlynn, E. A., et al. (2007). Relationship between number of medical conditions and quality of care. *The New England Journal of Medicine*, 356, 2496-2504.
- Hoque, M., Hoque, E., & Kader, S. B. (2008). Audit of antenatal care in a rural district of KZN, South Africa. *South African Academy of Family Practice*, 50, 66-70.
- Human Right Impact Resources Center [HRIRC]. (2002). *Government policies on eclampsia in Bangladesh and the impact on the right to health*. Retrieved September 23, 2008, from <http://www.humanrightsmpact.org/fileadmin/hrio-resources/Report-of-HeRWAI-Nariopokkho>.

- Islam, M. A., Chowdhury, R. I., & Akhter, H. H. (2006). Complications during pregnancy delivery and postnatal stages and place of delivery in rural Bangladesh. *Health Care for Women International, 27*, 807-821.
- Isaranurug, S., Mo-suan, L., & Choprapawon, C. (2007). A population-based cohort study of effect of maternal risk factors on low birth weight in Thailand. *Journal of Medical Association Thai, 90*, 2559-64.
- Islam, M. T., Hossain, M. M., Islam, M. A., & Haque, Y. A. (2005). Improvement of coverage and utilization of EmOC services in southwestern Bangladesh. *International Journal of Gynecology and Obstetrics, 91*, 298-305.
- Kaye, D. K., Mirembe, F., & Bantebya, G. (2005). Perceptions of health care providers in Mulago hospital on prevention and management of domestic violence. *African Health Sciences, 5*, 315-318.
- Khan, M. M. H., & Kraemer, A. (2008). Socio-economic factors explain differences in public health-related variables among women in Bangladesh: A cross-sectional study. *Biomed Central Public Health, 8*, 254-264.
- Kirkham, C., Harris, S., & Grzybowski, F. (2005). Evidence-based prenatal care: Part I. General prenatal care and counseling issues. *American Family Physician, 71*, 1307-1316.
- Klossner, J. N. (2006). *Introductory maternity nursing*. Philadelphia: Lippincott Williams and Wilkins.
- Kritchaoen, S., Ingkathawornwong, T., Singchungchai, P., Limchaiarunruang, S., Intanon, T., & Phanthong, U. (2005). Perceptions of nurse-midwives and clients on nurse midwife roles. *Songklanagarind Medical Journal, 23*, 269-276.

- Kunkel, S., Rosenqvist, U., & Westerling, R. (2007). *The structure of quality systems is important to the process and outcome, an empirical study of 386 hospital departments in Sweden*. Retrieved August 31, 2009, from <http://www.biomedcentral.com/content/pdf/1472-6963-7-104>.
- Kunaviktikul, W., Anders, R. L., Srisuphan, W., Chontawan, R., Nuntasupawat, R., & Pumarporn, O. (2001). Development of quality of nursing care in Thailand. *Journal of Advanced Nursing*, 36, 776-784.
- Lavender, T., & Chapple, J. (2004). An exploration of midwives' views of the current system of maternity care in England. *Midwifery*, 20, 324-334.
- Langer, A., Villar, J., Romero, M., Nigenda, G., Piaggio, G., Kuchaisit, C., et al. (2002). *Are women and providers satisfied with antenatal care? Views on a standard and a simplified, evidence-based model of care in four developing countries*. *BMC Women's Health*, 2 [Online]. Retrieved from <http://www.biomedcentral.com/content/pdf/1472-6874-2-7.pdf>.
- Marshal, B., & Blondel, B. (1998). Poor antenatal care in 20 French districts: Risk factors and pregnancy outcome. *Journal of Epidemiol Community Health*, 52, 501-506.
- Mercer, A., Hassen, F., Huq, N. L., Uddin, N., Khan, M. H., & Larson, C. P. (2006). Risk factors for neonatal mortality in rural areas of Bangladesh served by a large NGO programme. *Health Policy plan*, 6, 432-543.
- Mitra. (2009). *Bangladesh demographic and health survey 2007*. National Institute of population Research and Training. Dhaka, Bangladesh.

- Muntlin, A., Gunningberg, L., & Carlsson, M. (2006). Patients' perceptions of quality of care at an emergency department and identification of areas for quality improvement. *Journal of Clinical Nursing, 15*, 1045-1056.
- Murphy, K. (2007). Nurses' perceptions of quality and factors that affect quality care for older people living in long-term care setting in Ireland. *Journal of Clinical Nursing, 16*, 873-884.
- Murray, S. S., McKinney, E. S., & Gorrie, T. M. (Eds.). (2002). *Foundations of maternal-newborn nursing*. St. Louis: Saunders.
- National Collaborating Centre for Women's and Children's Health. (2008). *Antenatal care routine care for the healthy pregnant woman*. Retrieved September 10, 2009, from <http://www.nice.org.uk/nicemedia/pdf/CG0629NICEguideline050609>.
- Nigenda, G., Langer, A., Kuchaisit, C., Romero, M., Rojas, G., Al-Osimy, M., et al. (2003). *Womens' opinions on antenatal care in developing countries: results of a study in Cuba, Thailand, Saudi Arabia and Argentina*. Retrieved August 31, 2009, from <http://www.biomedcentral.com/1471-2458/3/17>
- Offei, A. K., Bannerman, C., & Kyeremeh, K. (2004). *Health Care Quality Assurance Manual*. Ghana Health services.
- Oladapo, O.T., & Osiberu, M.O. (2009). Do socio-demographic characteristics of pregnant women determine their perception of antenatal care quality? *Maternal and Child Health Journal, 13*, 505-511.
- Ozge, U. (2001). Patient satisfaction with nursing care at a university hospital in Turkey. *Journal of Nursing Care Quality, 16*, 24-33.

- Pajnkihar, M. (2009). Nurses (Un)partner-like relationship with clients [Abstract].  
*Nursing Ethics, 16*, 43-56.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implication for future research, *Journal of Marketing, 49*, 41-50.
- Polit, D. F., & Beck, C. T. (2004). *Nursing research: Principles and methods* (7th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.
- Polit, D. F., & Beck, C. T. (2008). *Nursing research: Generating and assessing evidence for nursing practice* (8th ed.). New York: Lippincott Williams & Wilkins.
- Rajcic, B. N., & Ciric, M. (2008). The importance of service quality for achieving customer satisfaction. *Fascicle of Management and Technological Engineering, 7*, 2572-2579.
- Rani, M., Bonu, S., & Harvey, S. (2008). Differentials in the quality of antenatal care in India. *International Journal for Quality in Health Care, 20*, 62-71.
- Rashid, S., Savchenko, Y., & Hossain, N. (2005). Public health and governance: The experience of Bangladesh and Ukraine. *The Quarterly Review of Economics and Finance, 45*, 460-475.
- Reza, S. (2008). *The essential community medicine* (9th ed.). Dhaka, Bangladesh: Nadia Ferdous Nimme Mediaplex.
- Rosebud, R., Barbara, Y., Susan, W., Charles, S., Melissa, G., & Steven, J. (1998). Barriers to prenatal care: Factors associated with late initiation of care in a middle-class Midwestern community. *Journal of Family Practice, 47*, 53-61.



- Robbins, S. P., & Coulter, M. (2005). *International edition management*. (8th ed.). Upper Saddle River: Pearson Prentice Hall.
- Rumbold, A. R., & Cunningham, J. (2008). A review of the impact of antenatal care for Australian indigenous women and attempts to strengthen these services. *Maternal and Child Health Journal*, *12*, 83-100.
- Sayed, U., Asiruddin, S., Helal, M. S. I., Mannan, I. I., & Murray, J. (2006). Immediate and early postnatal care for mothers and newborns in rural Bangladesh. *Journal of Health population and nutrition*. *24*, 508-518.
- Scholl, T. O. (2005). Iron status during pregnancy: Setting the stage for mother and infant. *American Society for Clinical Nutrition*, *81*, 1218-22.
- Sidebotham, B. M. (2004). NICE guideline: antenatal care under the microscope. *British Journal of Midwifery*, *12*, 137-140.
- Simkhada, B., Teijlingen, E. R van., Porter, M., & Simkhada, P. (2007). Factors affecting the utilization of antenatal care in developing countries: Systematic review of the literature. *Journal of Advanced Nursing*, *61*, 224-260.
- Smith, S. A., & Michel, D. (2006). A pilot study on the effects of aquatic exercises on discomforts of pregnancy. *Journal of Obstetrical, Gynaecological and Neonatal Nursing*, *35*, 315-323.
- Sperder, A. D., & Devellis, R. E. (1994). Cross-cultural translation. *Journal of Cross Cultural Psychology*, *25*, 501-525.
- Steffen, G. E. (1988). Quality medical care a definition. *Journal of American Medical Association*, *260*, 56-61.
- Sue, P. (1998). What determines quality in maternal care? Comparing the perceptions of childbearing women and midwives [Abstract]. *Birth*, *25*, 85 – 93.

- Thassri, J., Kala, N., Chusintong, L., Phongthanasarn, J., Broonsrirat, S., & Jirojwong., S. (2000). The development and evaluation of a health education programme for pregnant women in a regional hospital, southern Thailand. *Journal of Advanced Nursing, 32*, 1450-1458.
- Trinh, L. T. T., Dibley, M. J., & Byles, J. (2007). Antenatal care procedures and information reported by women in three rural areas of Vietnam. *Southeast Asian Journal of the Tropical Medicine and Public Health, 38*, 927-935.
- Uddin, M. T., Islam, M. T., & Ullah, M. O. (2006). A study of the quality of government hospitals in Bangladesh. *Journal of Pakistan Academic Science, 43*, 121-129.
- Urassa, D. P., Carlstedt, A., Nystrom, L., Message, S. N., & Lindmark, G. (2002). Quality assessment of the antenatal program for anemia in rural Tanzania. *International Journal for Quality in Health Care, 14*, 441-448.
- Uys, L. R., & Naidoo, J. N. (2004). *A survey of the quality of nursing care in several health districts in South Africa*. Retrieved August 31, 2009, from <http://www.biomedcentral.com/content/pdf/1472-6955-3-1>.
- Viccars, A. (2003). Antenatal care. In M. A. Cooper & D. M. Fraser (Eds.), *Myles textbook for midwives* (14th ed., pp. 251-274). New York: Churchill Livingstone.
- World Health Organization. (2003). *Nursing and midwifery services*. Retrieved December 3, 2008, from [http://www.whoban.org/nursing\\_midwifery.html](http://www.whoban.org/nursing_midwifery.html)
- World Health Organization. (2006). *Antenatal care coverage (percentage)*. Retrieved September 14, 2009, from <http://www.who.int/whosis/indicators/compendium/2008/3acf/en/index.html>

**APPENDICES**

**APPENDIX A**

**FORM - A: Demographic Questionnaire and Quality of Antenatal Care**

**Questionnaire (QACQ) for Nurses**

## FORM-A (FOR NURSES)

Form No .....Code No ...

Date .....Hospital.....

Instruction: This instrument divided into two parts. Part 1A , and part 2. Part 1A intends to know your demographics data, and part 2, about your perceptions regarding quality of antenatal care that you have provided to pregnant women in antenatal care unit.

## Part 1A: Demographic Questionnaire (For Nurses)

Instructions: Please tick  mark the answer which is suits you best.

1 Age: .....years.

2. Religion: 1.  Islam 2.  Hindu 3.  Christian 4.  Buddhist

3. Marital status: 1.  Married 2.  Single 3.  Separated 4.  Widowed

4. Highest educational level: 1.  Diploma in nursing 2.  Bachelor's in nursing

3.  Master's of nursing 4.  Others, Please specify...

5. Monthly family income: .....Tk.

6. Working experiences in ANC: .....Months

7. Number of training program participated in ANC: 1.  No 2.  One

3.  > One

8. Job experiences: .....Years

## Part-2: Quality of Antenatal Care Questionnaire (QACQ) (for nurses)

Instruction: This part related to your activities in antenatal care unit that you perform for the pregnant women. There is no any right or wrong answer. Please, circle (O) the number corresponding to each statement to which you agree and is best applicable to you. Your perception level of each item will indicate, 0 = never did; 1 = rarely did; 2 = sometimes did; and 3 = always did.

	Items	Never 0	Rare 1	Sometimes 2	Always 3
01	Asked pregnant women about last menstruation	0	1	2	3
02	Taken the past obstetric history about abortion	0	1	2	3
03	Taken the history about medical illness	0	1	2	3
04	Taken the history about previous surgery	0	1	2	3
05	Taken the family history of chronic disease	0	1	2	3
06	Measured the body weight	0	1	2	3
07	Measured the height	0	1	2	3
08	Measured the blood pressure	0	1	2	3
09	Measured the pulse rate	0	1	2	3

Items		Never	Rare	Sometimes	Always
		0	1	2	3
10	Checked eye to detect anemia	0	1	2	3
11	Examined the legs to detect edema	0	1	2	3
12	Examined the breasts and nipples	0	1	2	3
13	Observed abdominal abnormality	0	1	2	3
14	Measured fundal height	0	1	2	3
15	Observed quickening	0	1	2	3
16	Checked the fetal heart sound	0	1	2	3
17	Examined the presentation of fetus	0	1	2	3
18	Checked the urine for albumin test	0	1	2	3
19	Checked the urine for sugar test	0	1	2	3
20	Checked blood examination for grouping test	0	1	2	3
21	Checked blood examination for Hb% test	0	1	2	3
22	Provided information to eat good nutrition	0	1	2	3
23	Initiate the women to eat iron supplement.	0	1	2	3
24	Provided information to eat iron enriched foods	0	1	2	3

	Items	Never	Rare	Sometimes	Always
		0	1	2	3
25	Provide information about 5 danger signs if occur hemorrhage, obstructed labor, convulsion, fever, and severe headache and bluish vision	0	1	2	3
26	Provided information about high blood pressure	0	1	2	3
27	Provided information about abnormal of edema	0	1	2	3
28	Provided information about abnormal of urination	0	1	2	3
29	Advised women to regular follow-up	0	1	2	3
30	Advised the women to avoid heavy weight	0	1	2	3
31	Advised the women to avoid any drug without physician's prescription	0	1	2	3
32	Advised the women to maintain personal hygiene	0	1	2	3
33	Provided information to the women about early breastfeeding for baby	0	1	2	3
34	Showed the women how to hold the baby in correct position	0	1	2	3



	Items	Never	Rare	Sometimes	Always
		0	1	2	3
35	Initiated the women for exclusive breastfeeding	0	1	2	3
36	Provide information about burping after sucking	0	1	2	3
37	Provided information to the women to avoid artificial milk	0	1	2	3
38	Advised to follow-up the baby	0	1	2	3
39	Provided information to the women to take care of baby's umbilical cord after birth	0	1	2	3
40	Advised the women to vaccinate the baby after birth	0	1	2	3
41	Advised the women about the follow up in post-natal clinic after childbirth	0	1	2	3
42	Advised the women to visit the physician if postpartum abnormality occur	0	1	2	3
43	Advised about nutrition after childbirth	0	1	2	3
44	Provided information about family planning for birth spacing	0	1	2	3
45	Offered to have a seat	0	1	2	3

	Items	Never	Rare	Sometimes	Always
		0	1	2	3
46	Asked about discomfort	0	1	2	3
47	Did not raised the voice	0	1	2	3
48	Allowed relative during consultation if women wants	0	1	2	3
49	Explained the result of abdominal palpation	0	1	2	3
50	Closed the door during consultation	0	1	2	3
51	Used bed sheet during breast examination	0	1	2	3
52	Showed carefulness to expose when abdominal palpation	0	1	2	3
53	Did not allowed another person to enter during abdominal palpation	0	1	2	3
54	Did not allow other than relative during consultation	0	1	2	3
55	Received pregnant women with a smiling face	0	1	2	3
56	Asked about pregnant women's problem with caring	0	1	2	3
57	Provided time with interest to listen	0	1	2	3
58	Kept eye contact when talking	0	1	2	3

	Items	Never	Rare	Sometimes	Always
		0	1	2	3
59	Talked gently with politeness	0	1	2	3
60	Provided assurance about outcome	0	1	2	3
61	Asked permission before abdominal palpitation	0	1	2	3
62	Asked permission before breast examination	0	1	2	3
63	Maintained confidentiality	0	1	2	3
64	Explained the procedures before performing any examination	0	1	2	3
65	Agreed to accept pregnant women's belief	0	1	2	3

**APPENDIX B**

**FORM - B: Demographic Questionnaire and Quality of Antenatal Care  
Questionnaire (QACQ) for Pregnant Women**

## FORM-B (FOR PREGNANT WOMEN)

Form no .....Code no ....

Date .....Hospital.....

Instruction: This instrument divided into two parts: Part 1B, and part 2. Part 1B

intends to know your demographics data, and part 2 about your perceptions regarding nurses' activities that you have received from them in antenatal care unit.

Part- 1B: Demographic Questionnaire (For pregnant women)

Instruction: Please tick (✓) mark the answer which suits you best.

1. Age : .....years.

2. Religion : 1.  Islam 2.  Hindu 3.  Christian 4.  Buddhist

3. Marital status: 1.  Married 2.  Single 3.  Separated 4.  Widowed

4. Highest educational level: 1.  No education 2.  Primary school

3.  Secondary school (SSC) 4.  More than SSC

5. Occupation: 1.  House wife 2.  Working outside

6. Monthly family income: .....Tk.

7. Gestational age:.....wks

8. Number of antenatal visit: 1.  Second 2.  Third 3.  Fourth 4.  > Four

9. Number of parity: 1.  First 2.  Second 3.  Third 4.  > Third

10. Number of living children: 1.  None 2.  One 3.  Two 4.  > Two

Part-2: Quality of Antenatal Care Questionnaire (For pregnant women)

Instruction: This part related to your perceptions about care during pregnancy that you have received from nurses in antenatal care unit. There is no any right or wrong answer. Please, circle (O) the number corresponding to each statement to which you agree and is best applicable to you. Your perception level of each item will indicate, 0 = never did; 1 = rarely did; 2 = sometimes did; and 3 = always did.

**APPENDIX C**

**Written Permission by e.mail to Modify the Instrument**

**APPENDIX C****Written Permission by e.mail to Modify the Instrument**

Re: Request for questionnaire

☺ "Kaspar.Wyss@unibas.ch" <Kaspar.Wyss@unibas.ch>

Add Monday, June 29, 2009 1:44:13 PM

To:Fahima Akter [fahimamasud@yahoo.com](mailto:fahimamasud@yahoo.com)

Questionnaire

Dear Fahima

find attached the questionnaire you are looking for.

Hope this is helpful

Best regards

Kaspar

Kaspar Wyss, PhD, PD

Senior Public Health Specialist

Swiss Centre for International Health, Swiss Tropical Institute

Socinstr. 57, 4002 Basel, Switzerland

Tel: 0041-61-284 81 40



**APPENDIX D**

**List of the Experts for Content Validity**

## **Appendix D**

### **List of the Experts for Content Validity**

The instrument of the study entitled, “Perceptions of Nurses and Pregnant Women Regarding Quality of Antenatal Care in Bangladesh” was validated by three experts as follows.

1. Assist. Prof. Dr. Sasikarn Kala, PhD, RN, Midwifery Department, Faculty of Nursing, Prince of Songkla University, Thailand.
2. Mrs. Sumonta Kabinlapat, APN, RN, Antenatal Clinic (ANC), Songkhla Hospital, Thailand.
3. Mrs. Shirin Akter, RN, Nursing Instructor, Nursing Institute, Sir Salimullah Medical College Hospital, Mitford, Dhaka, Bangladesh.

**APPENDIX E**

**Consent Form**

## **Appendix E**

### **Consent Form**

I am Fahima Khatun, senior staff nurse, and presently pursuing master's degree in International program of Master of Nursing Science at Prince of Songkla University, Thailand. To fulfill the requirement of this program, I need to conduct research and submit a thesis entitled "Perceptions of Nurses and Pregnant Women Regarding Quality of Antenatal Care in Bangladesh". Permission has been obtained from the hospital authority to conduct this study. I would like to gain information regarding your personal and working information or family information. I would also like to ask you how you perceive the antenatal care provided to pregnant women by the nurses in antenatal out patient department.

I would like to inform you there would be no direct benefit to you in participating in study, but the result would be helpful to the Bangladesh Government to develop a program to improve quality of nursing care in antenatal care services. Your participation in this study will be on a voluntary basis. Data collection procedure will take approximately 30 minutes and you will have the right to stop your participation at any time without any reason. There will be no compensation in participation in the study.

I would like to assure you that your participation will not create any harm to you or to the hospital. Your information will be always kept confidential by using code number instead of name and confidentiality will be maintained all the time. The completed form will be destroyed after entering data in a software program. You have

the opportunity to ask any questions and get satisfactory answers about this research study.

If you have any question, complain, or comment about your participation in this study, please communicate to- Faculty of Nursing, Prince of Songkla University, Hat-Yai, Thailand, or to Fahima Khatun, Mobile: 0815413476 (Thailand), 0088-01716455559 (Bangladesh). e.mail. fahimamasud@yahoo.com.

Date.....

Signature of Researcher

Fahima Khatun

I have read/understand whatever mentioned above and willing to participate in this study.

Signature of Participant

Date.....

.....

**APPENDIX F**

**Items Analysis**

## Appendix F

### Items Analysis

Table 11

*Means, Standard Deviations and Percentage of Low and High Levels of Nurses' Perceptions (n = 56) and Pregnant Women's Perceptions (n = 56) of Each Item of the Quality of Antenatal Care*

Quality of antenatal care		Nurses (n = 56)						Pregnant Women (n = 56)							
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
<b>Items of technical care</b>															
<b>History taking</b>															
01	Asked pregnant women about last menstruation	2.98	.13	0	0	55	0.0	98.2	2.96	.19	0	0	54	0.0	96.4
02	Taken the past obstetric history about abortion	2.96	.19	0	0	54	0.0	96.4	2.91	.44	1	0	53	1.8	94.6
03	Taken the history about medical illness	2.75	.61	1	2	46	5.4	82.1	2.82	.61	2	0	50	3.6	89.3

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)						Pregnant Women (n = 56)							
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
Items of technical care				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
04	Taken the history about previous surgery	2.73	.56	1	0	43	1.8	76.8	2.39	.91	5	1	33	10.7	58.9
05	Taken the family history of chronic disease	2.59	.78	2	4	41	10.7	73.2	2.23	.93	5	4	27	16.0	48.2
Physical examination															
06	Measured the body weight	2.91	.29	0	0	51	0.0	91.1	2.82	.43	1	0	47	16.1	83.9
07	Measured the height	2.68	.74	2	3	45	8.9	80.4	1.86	1.24	14	5	25	33.9	44.6
08	Measured the blood pressure	2.91	.35	0	1	52	1.8	92.9	2.88	.33	0	0	49	0.0	87.5



Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)						Pregnant Women (n = 56)							
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
		Items of technical care													
09	Measured the pulse rate	2.79	.46	0	1	45	1.8	80.4	1.96	.99	7	7	19	25.0	33.9
10	Checked eye to detect anemia	2.46	.95	5	3	39	14.3	69.6	2.52	.93	5	2	41	12.5	73.2
11	Examined the legs to detect edema	2.71	.73	2	3	47	9.0	83.9	2.64	.77	3	1	43	7.1	76.8
12	Examined the breasts and nipples	2.09	1.03	6	9	26	26.8	46.4	1.38	1.3	23	6	17	51.8	30.4
Abdominal examination															
13	Observed abdominal abnormality	2.04	1.11	8	9	27	30.4	48.2	1.55	1.28	19	6	19	44.6	33.9

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)						Pregnant Women (n = 56)							
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
Items of technical care															
14	Measured fundal height	1.98	1.15	10	7	26	30.4	46.4	1.79	1.20	13	8	22	37.5	39.3
15	Observed quickening	2.46	.93	4	5	39	16.0	69.6	2.20	1.23	12	1	36	23.2	64.3
16	Checked the fetal heart sound	2.00	1.26	13	5	31	32.1	55.4	1.75	1.30	16	7	25	41.1	44.6
17	Examined the presentation of fetus	2.00	1.26	13	5	31	32.1	55.4	1.75	1.27	16	5	23	37.5	41.1
Laboratory examination															
18	Checked the urine for albumin test	1.91	1.24	13	6	27	33.9	48.2	1.89	1.09	9	9	21	32.2	37.5
19	Checked the urine for sugar test	1.98	1.20	11	7	28	32.1	50.0	1.89	1.12	9	11	23	35.7	41.1

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)						Pregnant Women (n =56)							
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
Items of technical care															
20	Checked blood examination for grouping test	2.36	1.15	9	3	41	21.5	73.3	20	1.09	7	5	39	21.4	69.6
21	Checked blood examination for Hb% test	2.29	1.22	11	2	40	23.2	71.4	2.30	1.13	9	2	37	19.6	66.1
Nutritional management															
22	Provided information to eat good nutrition	2.88	.32	0	0	49	0.0	87.5	2.95	.23	0	0	53	0.0	94.6
23	Initiate the women to eat iron supplement.	2.93	.32	0	1	53	1.8	94.6	2.80	.40	0	0	45	0.0	80.4

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)					Pregnant Women (n = 56)								
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
Items of technical care															
24	Provided information to eat iron enriched foods	2.68	.54	0	2	40	3.6	71.4	2.70	.57	0	3	42	5.4	75.0
Health risk management															
25	Provide information about 5 danger signs hemorrhage, obstruct labor, convulsion, fever, severe headache and bluish vision	2.98	.13	0	0	54	0.0	96.4	2.89	.41	0	2	52	3.6	92.9

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)						Pregnant Women (n = 56)							
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
Items of technical care															
26	Provided information about high blood pressure	2.77	.66	2	1	48	5.4	85.7	2.77	.60	1	2	47	5.2	83.9
27	Provided information about abnormal of edema	2.71	.68	2	1	45	5.4	80.4	2.43	.95	5	3	37	14.3	66.1
28	Provided information about abnormal of urination	2.59	.80	3	2	41	9.0	73.2	2.14	1.06	6	10	30	28.6	53.6
29	Advised the women to regular follow-up	2.88	.47	1	0	51	1.8	91.1	2.89	.41	0	2	52	3.9	92.9

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)							Pregnant Women (n = 56)						
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
		Items of technical care													
30	Advised the women to avoid heavy weight	2.96	.19	0	0	54	0.0	96.4	2.91	.44	1	0	53	1.8	94.6
31	Advised the women to avoid any drug without physician's prescription	2.98	.13	0	0	55	0.0	98.2	2.93	.42	1	0	54	1.8	96.4
32	Advised the women to maintain personal hygiene	2.96	.19	0	0	54	0.0	96.4	2.91	.34	0	1	52	1.8	92.9

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)						Pregnant Women (n = 56)							
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
Items of technical care															
<b>Breastfeeding</b>															
33	Provide information to the women about early breastfeeding for baby	2.98	.13	0	0	55	0.0	98.2	2.93	.26	0	0	52	0.0	92.2
34	Showed the women how to hold the baby in correct position	2.50	.91	3	7	41	17.9	73.2	1.63	1.34	20	4	23	42.8	41.1
35	Initiated the women for exclusive breastfeeding	3.00	.00	0	0	56	0.0	100	2.80	.48	0	2	47	3.6	83.9

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)						Pregnant Women (n = 56)							
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
Items of technical care															
36	Provide information about burping after sucking	2.40	.99	5	5	37	17.8	66.1	1.39	1.35	25	3	19	50.0	33.9
37	Provided information to the women to avoid artificial milk	2.89	.45	1	0	52	1.8	92.9	2.66	.64	1	2	41	5.4	73.2
Newborn care															
38	Advised to follow-up the baby	2.59	.56	0	2	35	3.6	62.5	2.18	.99	7	2	26	16.1	46.4



Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)					Pregnant Women (n = 56)								
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
Items of technical care															
39	Provided information to the women to take care of baby's umbilical cord after birth	2.55	.83	1	9	42	17.9	75.0	1.77	1.32	17	5	26	39.3	46.4
40	Advised the women to vaccinate the baby after birth	2.91	.34	0	1	52	1.8	92.9	2.89	.45	1	0	52	1.8	92.9

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)						Pregnant Women (n = 56)							
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
Items of technical care															
Postnatal care															
41	Advised the women about the follow up in post-natal clinic after childbirth	2.79	.49	0	2	46	3.6	82.1	2.71	.65	2	0	44	3.6	78.6
42	Advised the women to visit the physician if postpartum abnormality occur	2.93	.26	0	0	52	0.0	92.9	2.86	.48	1	0	50	1.8	89.3
43	Advised about nutrition after childbirth	2.93	.26	0	0	52	0.0	92.9	2.75	.58	1	1	45	3.6	80.4

Table 11 (Continued)

Quality of antenatal care	Nurses (n = 56)							Pregnant Women (n = 56)						
	M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
			Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
	Items of technical care													
44	Provided information about family planning for birth spacing													
	2.89	.45	1	0	52	1.8	92.9	2.80	.55	1	1	48	3.6	85.7
Items of Interpersonal care														
Providing comfort														
45	Offered to have a seat													
	2.95	.23	0	0	53	0.0	94.6	2.98	.13	0	0	55	0.0	98.2
46	Asked about discomfort													
	2.93	.26	0	0	52	0.0	92.9	2.89	.31	0	0	50	0.0	89.3
47	Did not raised the voice													
	2.93	.26	0	0	52	0.0	92.9	2.70	.63	0	5	44	8.9	78.6

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)						Pregnant Women (n = 56)							
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
Items of Interpersonal care				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
48	Allowed relative during consultation if women wants	2.84	.53	1	1	50	3.6	89.3	2.73	.55	0	3	44	5.4	78.6
49	Explained the result of abdominal palpation	2.39	.89	3	6	34	16.1	60.7	2.07	.95	7	2	20	16.1	35.7
Maintaining privacy															
50	Closed the door during consultation	2.52	.85	3	4	39	12.5	69.6	1.79	1.20	11	14	24	44.6	42.9
51	Used bed sheet during breast examination	2.98	.13	0	0	55	0.0	98.2	2.41	1.07	8	1	40	6.1	71.4

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)							Pregnant Women (n = 56)						
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
Items of Interpersonal care															
52	Showed carefulness to expose when abdominal palpation	3.00	.00	0	0	56	0.0	100.0	2.55	.91	5	1	42	10.7	75.0
53	Did not allowed another person to enter during abdominal palpation	2.98	.13	0	0	55	0.0	98.2	2.48	1.06	7	3	44	17.9	78.6
54	Did not allow other than relative during consultation	2.91	.29	0	0	51	0.0	91.1	2.75	.74	3	1	49	7.1	87.5

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)						Pregnant Women (n = 56)							
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
Items of Interpersonal care				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
55	Received pregnant women with a smiling face	2.95	.23	0	0	53	0.0	94.6	2.77	.42	0	0	43	0.0	76.8
56	Asked about pregnant women's problem with caring	3.00	.00	0	0	56	0.0	100.0	2.86	.35	0	0	48	0.0	85.7
57	Provided time with interest to listen	2.96	.19	0	0	54	0.0	96.4	2.88	.33	0	0	49	0.0	87.5
Building relationship															
58	Kept eye contact when talking	2.91	.29	0	0	51	0.0	91.1	2.73	.48	0	1	42	1.8	75.0

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)							Pregnant Women (n = 56)						
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
		Items of Interpersonal care													
59	Talked gently with politeness	2.96	.19	0	0	54	0.0	96.4	2.96	.19	0	0	54	0.0	96.4
60	Provide assurance about outcome	2.88	.33	0	0	49	0.0	87.5	2.63	.68	2	0	39	3.6	69.6
61	Asked permission before abdominal palpitation	2.91	.44	1	0	53	1.8	94.6	2.61	1.00	7	0	48	12.5	85.7
62	Asked permission before breast examination	2.93	.42	1	0	54	1.8	96.4	2.73	.86	5	0	51	8.9	91.1
63	Maintained confidentiality	2.98	.13	0	0	55	0.0	98.2	2.96	.19	0	0	54	0.0	96.4

Table 11 (Continued)

Quality of antenatal care		Nurses (n = 56)						Pregnant Women (n = 56)							
		M	SD	Frequency			Percentage (%) of level		M	SD	Frequency			Percentage (%) of level	
				Never	Rare	Always	Low	High			Never	Rare	Always	Low	High
		Items of Interpersonal care													
64	Explained the procedures before performing any examination	2.95	.23	0	0	53	0.0	94.6	2.77	.71	3	0	49	5.4	87.5
65	Agreed to accept pregnant women's belief	2.91	.34	0	1	52	1.8	92.9	2.91	.34	0	1	52	1.8	92.9



**APPENDIX G**  
**Eight Settings in this Study**

## Appendix G

### Eight Settings in this Study



Eight medical college hospitals 3 in Dhaka: DMCH, SSMCH-1, SSMCH-2; and five public medical college hospitals outside Dhaka located at Rangpur, Bogra, Rajshahi, Barisal and Chittagong where the study was conducted.

## VITAE

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Degree	Name of Institution	Year of Graduation
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Diploma in midwifery nursing	Nursing Institute, Dhaka	1990
Bachelor of Arts	National University	1993
Bachelor in Public Health Nursing	Dhaka University	1998

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