



## NURSES' AND PREGNANT WOMEN'S KNOWLEDGE REGARDING QUALITY ANTENATAL CARE IN TERTIARY CARE HOSPITALS IN PESHAWAR, PAKISTAN

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### Abstract

**Background:** Antenatal Care is essential for every pregnant lady during the period of pregnancy for the healthier result is called antenatal care. Quality antenatal care is significant for the good health of a mother. It is a vital approach to minimizing maternal mortality and morbidity. Knowledge of pregnant women and nurses regarding quality antenatal care can promote maternal health, and it can also reduce mother's and child's mortality rate.

**Aim:** The aim of this study was to determine mothers' and nurses' knowledge of quality antenatal care.

**Method:** This Cross-sectional study was conducted to determine nurses' and mothers' knowledge regarding quality antenatal care at three tertiary care public sector hospitals in Peshawar. A total of 189 pregnant women and 59 registered nurses working in antenatal care units were recruited for the study through Stratified random sampling. SPSS version 20 was used for data analysis.

**Results:** The mean knowledge of pregnant women about quality antenatal care noted was  $84.84 \pm 13.5$ , whereas the mean knowledge score of nurses regarding quality antenatal care was  $92.82 \pm 5.13$ . A significant association was noted between mothers' age and knowledge of quality antenatal care with a p-value of 0.020.

**Conclusion:** The current study identifies that pregnant women and nurses working in antenatal care units of tertiary care hospitals of Peshawar have good knowledge of antenatal care. The study suggests that health authorities should take necessary actions for developing and implementing policies and procedures for further improvement of pregnant women and nurses' knowledge regarding the subject matter.

**Keywords:** Antenatal care, Nurses' knowledge of antenatal care, pregnant women's knowledge of antenatal care, quality care

## Introduction

Antenatal care means the care that is provided to pregnant women in the gestational period with the aim of improvement in pregnancy outcome (1). Antenatal care implies an organized set of health care services for pregnant women aiming mainly at a healthy mother and baby (1). Yet in another way, antenatal care means assessing risk factors and examining other health-related series to expose situations that may threaten mothers and their babies during in pregnancy. World Health Organization (2006) reported that antenatal care may establish health screening and socioeconomic situations to cope with particular adverse pregnancy outcomes; in such a care, therapeutic interventions may be effective and education of safe birth to pregnant women may be of significance for dealing with emergencies (2). Besides, antenatal care and awareness of it are vital for the best outcomes of pregnancy and maternal health in both developed and developing countries. As Pregnancy is deemed a suitable time for imparting education on antenatal care to women because it is the period in which the women become cautious and are cared for (3). Thus not providing sufficient care during the period of pregnancy and during the delivery time to a pregnant woman may lead to maternal deaths or either maternal morbidity (4). Every year, a lot of mothers and neonates die on account of complications that occur during pregnancy; the death ratio of them due to these complications is approximately 530,000 worldwide (5). While, newborn infant's mortality rate is 36 per 1000 live births, and several deaths happen because of inappropriate antenatal care during or before delivery (6). All over the world, 12% infants, who lost their mothers during delivery, died within 2 months. The healthcare providing system is required to identify the reasons to decrease maternal mortality and morbidity (7). The available literature around the globe regarding the deaths of a mother and newborn related to improper antenatal care. The statistics from Bangladesh showed that 69% of women belonging to rural did not obtain any antenatal care (8). The majority of the deliveries 90-94% happened at home and only 15% happened in health care services (9). In developing countries, the majority of mothers were never provided with the required prenatal or maternity care from registered healthcare providers (10). Consequently, the major reasons for maternal expiry were identified as perilous cessation of fetal development, eclampsia, postnatal hemorrhage, obstructed labor, and puerperal sepsis (9). Besides, the very common problems during pregnancy such as preeclampsia, pain, hypertension, and excessive bleeding need sufficient prenatal care from health setups (8). For timely recognition of abnormalities, look after by nurses at antenatal clinics may be beneficial; for instance, edema, parlor, hypertension, reversed or horizontal nipples, inadequate fetal movement, and irregular fetal appearance may be of much significance for early diagnosis and timely management which in return may improve maternal health (11). The role of nurses in the antenatal period and during delivery is significant; they render a high level of maternal health services that help decrease maternal and prenatal mortality rates (12). Nurses greatly influence the quality of care, and their knowledge of antenatal care affects the health of the mother and baby in all stages whether it is prenatal, natal, or postnatal (13). The knowledge level of nurses varies all over the world; in Tanzania, nurses have quite good knowledge of preventing malaria in pregnant women (14). It falls under the moral, ethical, and professional duties of a nurse to provide care to pregnant women (11). According to a cohort study that was conducted on 8267 non-Dutch pregnant women in Holland, the emergence of complications is due to the late receiving of antenatal care (15). Yet another study appears to reveal that pregnant women along with their progeny in rural areas of India with no antenatal services had a high risk of mortality and morbidity (16). Care-giving, providing health education to patients, and listening to clients are among the responsibilities of nurses. A study conducted in Sweden revealed that nurses had very good compliance from mothers with an average of 13.2 visits to the unit (17). A systematic review of 30 studies conducted in 23 developing countries showed a significant variation among pregnant women's use of antenatal care services, the responsible factors are age, education level, access to antenatal care resources, socioeconomic conditions, quality of the services, and government policies etc(2).

For safe motherhood, standard antenatal care is indispensable, for it is the vital approach to reducing the maternal condition of being susceptible to death and adverse effects of illness and treatment (7).

When the proper procedure of taking assessments and information is employed, nurses can promote maternal health (18). Pregnant women's perception and satisfaction with quality care services may make grounds for antenatal care setups. As an example, the antenatal care receiving rate in Thailand and Tanzania is more than 80% as compared to the rate which is 48% in Bangladesh. Thus, quality care in the antenatal period has an elemental role in enhancing the health of mothers and newborn babies worldwide. It also facilitates better deliveries. What is the quality of antenatal care is the resulting question that can be best answered in the words of care that are based on the standards in health setups persistently observed by health care providers (19). Low antenatal care is also one of the factors that cause high maternal mortality (20). The structure of care is designed and run by multiple healthcare services among which nursing is the field that plays a major role in enhancing health facilities to meet pregnant women's health and care requirements.

The significance of the study is evident from the very limited literature available on this topic, especially in the Pakistani context. A study conducted in Punjab Pakistan to show the effects of gender on female attainment of antenatal care shows that the husband and in-laws play an important role during pregnancy of women and affect the attainment of antenatal care by a female (21). Another study in Sindh province elaborated on the importance of demographic, socioeconomic, and environmental factors in the utilization of antenatal care services by pregnant women (22). The current study is the first of its kind in KPK, and its findings may be helpful in improving antenatal care. The current study may come out significant in disseminating the basic information regarding the existing quality of antenatal care in the Pakistani context. The results will appear to define areas that may need improvement. These areas might be clinical sites, antenatal clinics, etc. The findings of the study may pave the way for establishing quality nursing care in the target field which may improve the condition of both mothers and babies as well as of the nursing profession.

### **Objective of study**

The main objective of the study is:

- To determine the knowledge of nurses and pregnant mothers about quality antenatal care
- To compare the knowledge of nurses and pregnant women about quality antenatal care.

### **Methodology**

This quantitative cross-sectional study was conducted on pregnant women and registered nurses working in the gynecology department in three major public tertiary care hospitals in Peshawar, Pakistan. The Sample size was calculated on CDC Epi-info software proportionate sample size for nurses was 65, whereas for mothers it was 189. A simple random sample technique was used for the selection of nurses while a convenient sampling technique was used for the selection of mothers in the study. Data was collected from the participants using two different structured questionnaires, one for mothers and the second for Nurses. Before actually administering of questionnaire it was applied to 15% of the sample size of pregnant women and nurses working in the gynae department as pilot testing. The reliability of the questionnaire was calculated by using Cornbrach alpha and was 0.87. The data was analyzed using SPSS version 22.0. In descriptive statistics frequency and percentage criteria were used for categorical and nominal variables. Means and standard deviation were calculated for continuous data. In inferential statistics independent sample t-test, linear regression, and ANNOVA with post hoc Tukey test were applied to continuous data while chi-square on categorical. Independent sample t-test was applied to identify the significance between nominal and continuous variables, and ANNOVA with post hoc Tukey test was applied to determine the significance between categorical variables. Chi-square was applied for calculating the significance between categorical variables.

### **Ethical Consideration**

Ethical Approval was obtained from the Ethical Review Committee of the KMU Peshawar, Pakistan. In addition, permission was sought from the medical/nursing superintendents of all three hospitals for

data collection. A well-explained informed consent (Appendix E) was obtained from each participant before data collection. The information letter given to each participant included the study purpose, risks and benefits, and the participant's right to refuse or withdraw. The anonymity and confidentiality of the participants were assured during data collection and also after the research study.

## RESULTS

### Demographic Characteristics of the Participants

The section is sub divided into the demographic details of the mothers and also the demographic details of the nurses.

**Mothers:** Out of all 189 mothers studied the mean age was  $27.05 \pm 5.9$  years, The overall education level of mothers is shown in (table1) The mother's knowledge regarding antenatal care was checked through a questionnaire with a total score of 100 and the mean score secured by mothers was  $84.84 \pm 13.5$  (Fig 1.1). The number of mothers' pregnancies was also asked. 13.2 % of the mothers were having their first pregnancy, 36.5 % of them were having their 2<sup>nd</sup> pregnancy while the rest were having 3<sup>rd</sup> or even more than 3<sup>rd</sup> pregnancy (Fig 1.2). 4.7 % of mothers had their first trimester of pregnancy, 18.5% were having their 2<sup>nd</sup> trimester of pregnancy and the remaining 76.3% were in their last trimester of pregnancy shown in (table 2).

Table 1

Education Level	Frequency
Uneducated	56
Primary	3
Middle	16
Matric	58
Intermediate	28
Graduate	24
Master	4
Total	189

Table 2

Nth Trimester	Frequency
First	9
Second	35
Third	144
Total	189

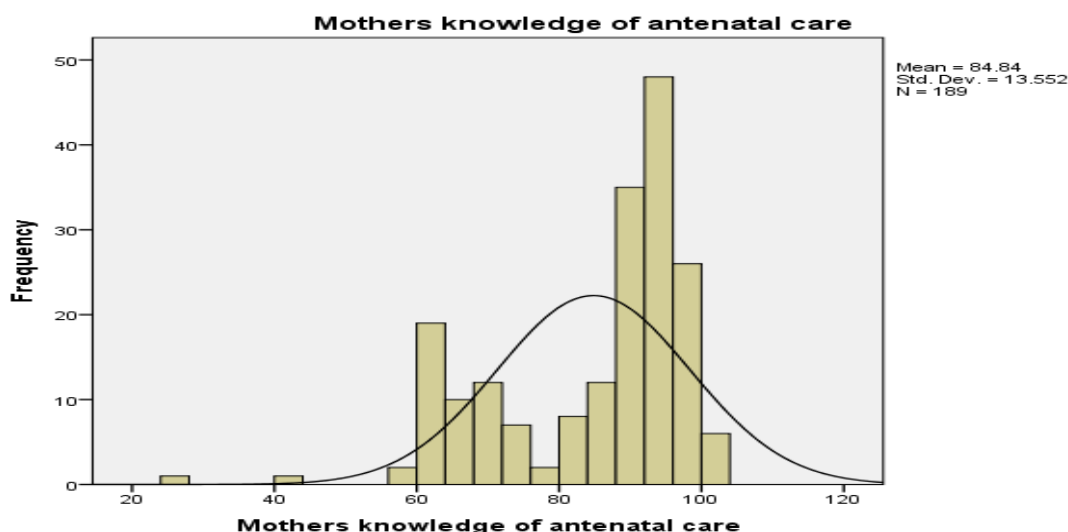


Figure 1.1

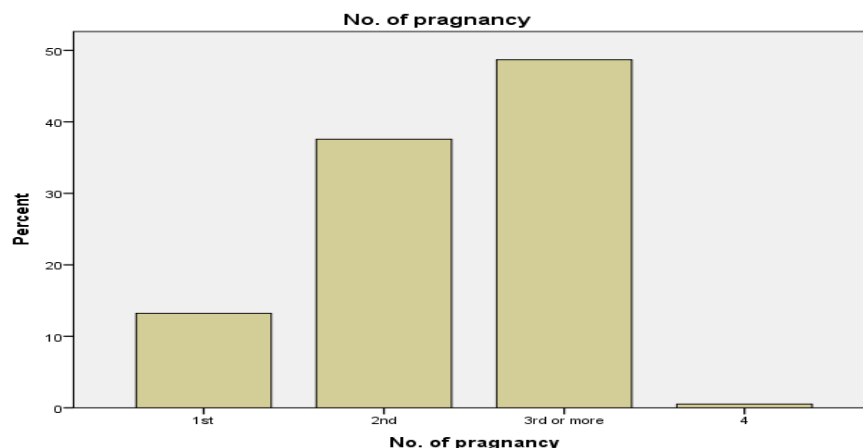


Figure 1.2

Moreover, the overall knowledge of mothers was categorized as low level, average level, and good knowledge. 5% of the mothers' population had a low level of knowledge, 16.2% of them had an average level of knowledge and 78.8% of mothers were having a good level of knowledge (Fig 1.3)

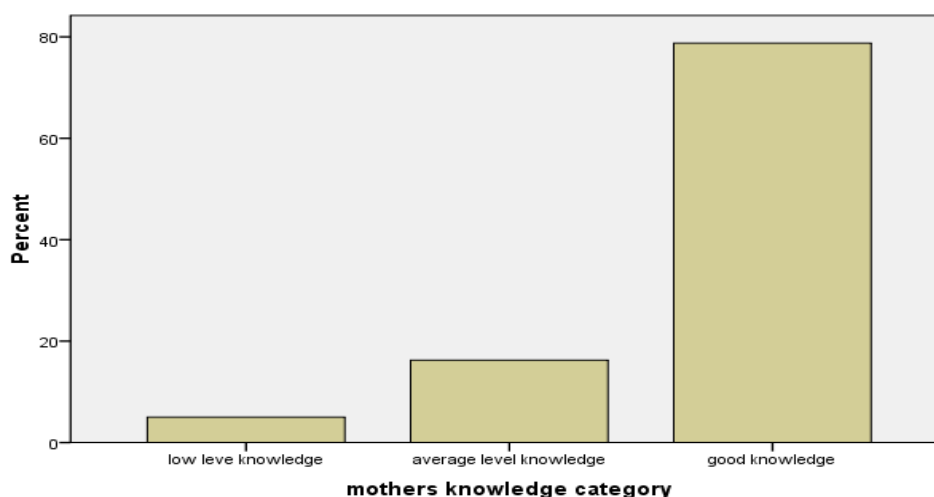


Figure 1.3

One-way ANOVA was applied to identify a significant association between the number of pregnancies and mothers' knowledge but it was not significant. Linear regression was applied to check any linear relationship between age and mothers' knowledge and it was significant with a p-value .02. **Nurses:** The nurses' demographic characteristics were also identified. The total number of nurses included in the study was 59. The professional qualifications of the nurses are shown in Table 3.

Table 3

Qualification level	Frequency
Diploma with midwifery	34
BSN	22
MSN	2
Midwifery only	1
Total	59

The mean age of the nurses was  $28.9 \pm 6.3$  years. The knowledge of nurses regarding antenatal care was  $92.8 \pm 5.2$ .

The score obtained by nurses is categorized as a low-level average and a good level of knowledge. Out of 59 nurses, only one nurse has a low level of knowledge and one has an average level of knowledge, while the remaining 57(96.6%) of the nurses have a good level of knowledge. (fig 1.4)

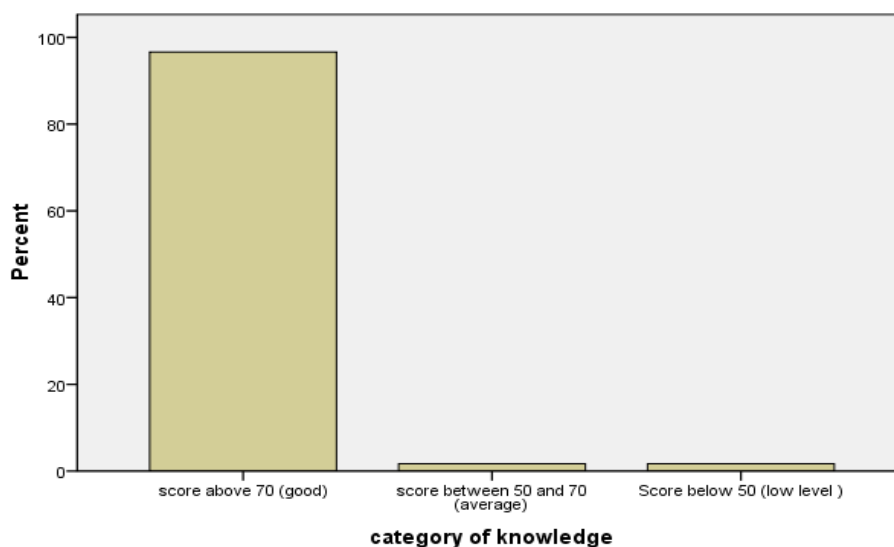


Figure 1.4

## Discussion

The current study was conducted to determine the knowledge of nurses and mothers about the quality of antenatal care. To determine the knowledge of nurses on the subject of quality of antenatal care, the score was calculated through the percentage in which the participating nurses obtained 84.84% score; for this purpose, a questionnaire was used. From the aforementioned findings, the current study resulted in several reasons that consist of hospital setups, experience and exposure in terms of years, experience in antenatal care units, and training and professional education in the relevant field.

As nursing staff work in many wards of hospitals and they perform diversified everyday jobs in different health setups such as procedure of diagnosis, human resources, assessment room for physical examination, and workshops of health education, they are fully prepared and ready to work in antenatal care units as well. Organizational setups may influence nursing staff to learn high levels of quality antenatal care; this factor was found out in a study conducted on assessing the satisfaction level of women and health services regarding health amenities for mothers and children in Dhaka, Bangladesh (23). A study carried out in tertiary care hospitals in Peshawar appeared to show the good knowledge level of nurses regarding antenatal care. Another study comparing public and private healthcare-givers in the organizational and procedural quality of antenatal care was conducted in Tanzania (24) which showed that both the private and public health providers were equally good in rendering quality antenatal care. In light of various findings, it might be said that better services at hospitals make nurses perceive that they did a good job.

Work experience and duration at antenatal care setups may result in comprehensive knowledge for nurses because antenatal care units always make them face multiple challenges in providing quality care (25). The current study included nurses who had the experience of more than a year in a government hospital; this is also an eligibility criterion for nurses' selection in hospitals. Furthermore, nurses should have a specialty in midwifery for working in antenatal care units. Thus, well-experienced and capable nurses can deal proficiently with pregnant women and can deliver high-quality care to patients.

As far as the education level of nurses is concerned, the current study revealed that 57.6% of nurses had a midwifery specialty preceded by three years of general nursing; whereas, 37.3% of nurses had done BSN and Post RN BScN, while the remaining 3.1% of nurses had done MSN. Compared to the literature review in other studies, the current study also shows that the quality of antenatal care has

reciprocal relation with the quality of health care professionals. The viewpoint of nurses regarding the quality of antenatal care is directly influenced by their scholarly knowledge, fieldwork exposure, and didactic programs (26, 24). Nurses' role in antenatal care is to assess routine fetal cardiac auscultation, albumin and sugar analysis, and fundal height measurement to detect gestational development. If nurses have higher education, they will have better knowledge of antenatal care. This will improve antenatal care (27) and through such care nurses will be able to reduce risk factors that lead to infant mortality rate; on the other hand, maternal health may be improved.

A study revealed that 78.2% of pregnant women had good knowledge of quality antenatal care; this level of knowledge was due to satisfaction of the client, availability of health facilities and resources in care setups, positive behavior of caregivers, and socio-demographic traits. Out of all the aforementioned factors, mothers' satisfaction was a vital element that determines the quality of care that has an impact on pregnant women (28). Nurses' role in delivering antenatal care with technical and interpersonal skills satisfies pregnant women who feel comfortable and relaxed due to privacy sustainability by nurses. Upon such an attitude from nurses in antenatal care setups, pregnant women might think that nurses would always do their best. Repeated visits to patients, keeping privacy, and delivering the best care are among some of the features of professional nurses who contribute to the betterment of antenatal care (Mountin, et al., 2006, Murphy. 2007). The result of the current study is also congruous with a study conducted in Bangladesh to highlight the standard of health care, the attitude of health care professionals, and sustaining of patients' privacy. The findings showed that all these factors are significant for patients' satisfaction and perception of high-quality care (Aldana, et al., 2001). Similarly, another study observed the satisfaction level of women regarding maternal and baby health services in Dhaka, Bangladesh; the findings showed that 76.60% of women had a high level of knowledge about antenatal care (Hasan, et al., 2007). Besides this, Fawole, et al. (2008) identified that above 96% of pregnant women perceived that they got quality care from nurses; this notion added to their satisfaction level. The fact that had been elemental for positive notion regarding antenatal care was the best deliverance of care at tertiary hospitals that influence pregnant women's knowledge about antenatal care.

Demographic traits of mothers were also significant in their knowledge of antenatal care; due to demographic traits, mothers were considered to understand the performance of nursing staff in antenatal care units (29). The mean age of mothers was 27.5±5 years which had a significant association (Pvalue=0.02) with mothers' knowledge of antenatal care established that midwives' role in antenatal care perceived by mothers was higher than that of nurses. Knowledge and expectancy level regarding quality antenatal care is affected by higher education, socioeconomic status, and profession. The literature review highlights the better understanding of antenatal care by women with high qualifications as compared to uneducated women (30). Hence, educated mothers with good knowledge of antenatal care have good compliance which brings about low susceptibility among educated mothers and their newborns (31). Fawole, et al. (2008) found that highly educated patients thought that waiting at antenatal care clinics was too lengthy, while low or uneducated ones perceived the same as normal (32). In contrast, the ratio of nurses and mothers, prolonged waiting hours, time spent in visits, and mothers' education level are the factors that impact knowledge of quality antenatal care (Fawole, et al., 2008). The satisfaction level of mothers from care by nurses at antenatal clinics was quite good; however, 23 % of patients had no emotional satisfaction, whereas 18% of them had no medical satisfaction (33). The current study found out to reveal that pregnant mothers admit that nurses always perform the required activities at antenatal clinics. In addition, the literature review highlights that keeping privacy is a more significant factor at antenatal clinics; it influences pregnant women to recognize high-quality care (34).

Currently, the nurses have good knowledge of quality care based on good educational background and effective professional skills. As per the research questionnaire, the mean score obtained by nurses was 84.8%, while that of pregnant women was 92.4%. The calculation shows little difference between the knowledge of nurses and mothers; it might be due to pregnant women's lower educational status. 29.6 % of pregnant women had no formal education, while 1.6% of them had only primary-level

education and 8.5% had secondary-level education. The result indicated that they do have not sufficient education which might affect their knowledge of antenatal care.

## Conclusion

The Nurses' and mothers' knowledge regarding quality antenatal care is important for reducing the mortality and morbidity of both mothers and newborns. Though mothers and nurses both had good knowledge of quality antenatal care but still improvement is needed. Limited published literature is available on the same topic in the Pakistani context, so conducting studies on the same topic in other areas of the country may help to identify the status of mothers' and nurses knowledge about the subject matter and it may also help the health authorities to take necessary actions for the improvement of infection control practices in public sector hospitals.

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