ORIGINAL ARTICLE

QUALITY ASSESSMENT OF FOCUSED ANTENATAL CARE SERVICE DELIVERY IN TERTIARY CARE HEALTH FACILITY

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Background: Regardless of high maternal deaths in Pakistan, only 37% of pregnant women make four or more antenatal care visits during pregnancy. This proportion has further been diverged between urban and rural. About 62% of women visit clinics for WHO recommended sets of antenatal care (ANC) check-ups in urban as compared to 26% women in rural areas. This study was conducted with the aim to assess quality of Focused ANC service delivery in terms of examination, screening, treatment, counselling and to determine variation in service delivery with provider's clinical qualification and expertise. **Methods:** Cross sectional study design was used. Data was collected from pregnant women when they were visiting hospital for their antenatal visits. Direct observation was also made regarding provision of services. **Results:** Out of 278, 55% of study women were in 28–33 years age group and 21.2% made at least one visit. While 42.8% reported more than one visit, 98.9% received tetanus toxoid, 82% received proper screening. Counselling was done mostly regarding nutrition and self-care (42.8%), and significant association (p-value <0.05) was observed between provider's clinical qualification and provision of services such as for screening and counselling. **Conclusion:** The delivery of antenatal care services to pregnant women varied to some extent. Most of the routine investigation services were in accordance with recommended standards of optimal quality with little divergence from guidelines such as screening for HIV and syphilis. Better quality services were being provided to private participants in terms of counselling and danger sign screening.

Keywords: Antenatal care; FANC service delivery; Maternal mortality; Optimal Quality

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INTRODUCTION

Care seeking during pregnancy is vital for maternal and new-born's health as pregnancy is a crucial time to promote healthy behaviours through provision of certain preventive and health promotion services.[1,2] Focused antenatal care (FANC) model, promoted by WHO, is an updated integrated approach to antenatal care that emphasizes quality over quantity of visits, focus is on individual needs in maintaining normal pregnancies, preventing complications and facilitates early detection and management of complications.[3–5] Skilled attendance at birth, clean and safe delivery, new-born care and support during and after birth are all part of FANC service package.[6] Most maternal deaths occur during labour, at the time of delivery or the first 24 hours postpartum, and most intra partum complications cannot be reliably predicted or prevented, though most can be successfully treated with prompt diagnosis and appropriate care.[7,8] ANC is an essential link in household-to-hospital continuum of care and according to WHO, ANC reduces maternal mortality and morbidity, in developing countries, directly through detection and treatments of pregnancy related or inter- current illnesses (malaria, anaemia and syphilis) which have huge impact on maternal and neonatal health.[9] A study in rural Cambodia revealed that frequent antenatal care attendance would have an impact on maternal mortality not only through early detection of obstetric conditions but also by influencing women's decision to deliver babies at health facilities.[10] Given the relatively low cost of ANC, this package is among the most cost effective of any public health package.[11] Moreover, quality ANC services are among one of the four pillars of Safe Motherhood Initiative, along with clean delivery, essential obstetric care and family planning, which contribute towards reduction of maternal mortality.[12]

Antenatal care is an important indicator of access and use of health care during pregnancy. Currently, 81 percent of women worldwide have ANC coverage of at least one visit depicted by World Health Statistics 2012, and in industrialized countries, more than 95 percent of pregnant women have access to ANC.[13,14] In developing countries coverage of at least one ANC visit is relatively high at 69% in Sub-Saharan Africa, compared to 54% in Asia[14]; however, quality of services along with coverage is essential to maximize the impact. In Pakistan, almost three-quarters of mothers (73%) reported consulting a skilled health provider at least once for antenatal care[15]; however, the differentials in antenatal care coverage are large. Coverage is highest for births to women less than 35 years old (three-quarters), and much higher in urban areas (88%) than rural areas (67%). Across regions, the proportion of mothers receiving ANC

services is markedly lower in Baluchistan (31%) than in Punjab and Sindh (78% each), Gilgit Baltistan (64%) and KPK (61%). Despite highest ANC coverage in Punjab, a study reported that among enrolled pregnancies, 1/3 drop out in follow-up visits.[15]

Although maternal mortality has decreased by almost 50% between 1990 and 2010, still every day, approximately 800 women die from preventable causes related to pregnancy and childbirth and 99 per cent of all these maternal deaths occur in developing countries [16]. Between a third and a half of maternal deaths are due to causes such as hypertension (pre-eclampsia and eclampsia) and ante partum haemorrhage (APH), which are directly related to inadequate care during pregnancy, lack of FANC coverage or poor quality service delivery.[17]

According to Pakistan Demographic and Health Survey 2012–13, there has been a substantial improvement over the past 11 years in the proportion of mothers receiving antenatal care from a skilled health provider, increasing from 43 percent in 2001–61 percent in 2006–07 and to 73 percent in 2012–13 but in terms of MMR, only 25% reduction has been achieved over the past ten years, from 350–260 per 100,000 live births as depicted by UNDP Human Development Index.[18] Thus, quality of service provision must be addressed. Studies assessing quality of care in public and private ANC clinics, raised questions on health worker's performance and found that practices often diverge from the standards guidelines and diagnostic examinations were not carried out by health workers.[19,20] Several studies reported poor counselling and inadequate health education of pregnant women or negative health worker attitudes during ANC visits[21,23], finally lead towards dissatisfaction with ANC services. A study on quality of care noted that most health workers in public facilities did not dwell much on educating women on topics like danger signs and birth plan during pregnancy.[19] According to a recent study in Hyderabad, Sindh, half of the women in study sample were satisfied with the overall care provided to them.[24]

This study was conducted with the aim to assess quality of Focused ANC service delivery in terms of examination, screening, treatment, counselling and to determine variation in service delivery with provider's clinical qualification and expertise.

MATERIAL AND METHODS

The study was conducted in an urban setting, at Pakistan Ordinance Factories (POF) Hospital, Wah Cantt, District Rawalpindi after obtaining approval from Ethical Review Committee (ERC) of Health Services Academy, Islamabad. Cross Sectional study design has been used to assess the quality of Focused ANC services provided to women visiting tertiary health facility and quantitative approach of data collection was used in this regard. Quality of service delivery has been assessed by observing and asking close ended questions regarding standard guidelines and recommended standard practices related to FANC services. Data was collected from a sample of 278 through convenient sampling technique (non-probability sampling). The study population comprised of pregnant women visiting that particular tertiary care setting in order to seek antenatal care and was recruited in the study regardless of their trimester and number of Antenatal visits. Women with any obstetric complications and those coming in emergency department of hospital were not recruited in the study.

Informed verbal consent was obtained after explaining aim and objectives of the study to the participants. A detailed structured questionnaire was administered by data collector after obtaining formal permission from the commandant of the data collection site. At baseline, demographic information of patients was recorded and each selected woman was asked to share information concerning ANC visit in that particular facility. Direct observation was made according to areas defined in data collection tool and participants were interviewed regarding provider's behaviour, screening for danger signs, physical examination, laboratory tests, immunization status and counselling in different areas of concern like nutrition and self-care, family planning, emergency management, importance of breast feeding and postnatal care.

Data was entered and analysed by using SPSS-20.0. Associations between independent and a dependent variable were tested using Chi square test with p value ≤ 0.05 considered as significant. The independent variables tested were provider's clinical qualification/designation, patient category, number of antenatal visit and dependent variables include provider's behaviour towards patients, physical examination, screening/treatment and counselling in different areas of concern. The association between the independent and the dependent variable was analysed for drawing statistical associations among various variables.

RESULTS

Out of 278 participants recruited in study, all formally agreed to be part of this study and were interviewed regarding services provided during their antenatal visits; thus, response rate was 100%. Women of different ages were observed to visit health facility for antenatal services, ranging between 22–39 years. Majority of the women were of age group 28–33 years (55.75%) with mean age of 31.33±3.566(med 31.00)

and with second parity (41.7%, mean 2.09±0.957, median 2.0). Women visiting health facility for their first antenatal visit was highest (29.1%) among others. Participants recruited for study were from both categories, i.e., that is POF employees and Non-POF (private patients) but frequency of patients who were POF employees, was high. Majority of the participants were educated up to graduation level (37.1%) and only 0.7% were of primary level.

Antenatal services were provided by health workers with different clinical qualifications and expertise in that particular study setting. Majority (64.4%) of the pregnant women visiting OPD of the hospital, were entertained by PG trainees who were in third or fourth year of their training. Specialist consultants and professors were only available for 99 (35.6%) patients including 54 private participants. Usually, 35–40 women were visiting OPD of health facility per day: specialists or professors were dealing only 20–25 women per day including both categories of patients, for provision of antenatal care services.

Antenatal care Services in terms of provider's attitude towards patients, their physical and laboratory examination, treatment and counselling were assessed during the study. Behaviour of service providers was good towards participants in general and they were dealing women with respect, observed during data collection. Study findings revealed that personal, psychosocial, medical and previous obstetric history was taken in 97.8% participants, visiting hospital for seeking antennal care. Six (2.2%) participants revealed the fact that no past history was taken from them during service provision. Among those 5 (1.8%) were dealt by PG trainees and 1 (0.4%) by specialist consultants. During the period of data collection, all participants were asked about their physical examination in accordance with their number of antenatal visits. Findings revealed that all women were examined for their weight, blood pressure, anaemia, foetal growth and movements. Estimated due date (EDD) was calculated according to last date of menstruation, in all 81 (29.1%) participants, who had visited for their first antenatal check-up. Women were also examined for foetal heart sounds, multiple pregnancies and mal presentation during their visits. Findings were confirmed with the help of direct observation also.

Study findings revealed that women were asked for different laboratory tests during their visits. Participants were screened for danger signs, blood group, Rh factor, haemoglobin, diabetes and hepatitis. As shown in Figure-1, 90.6% participants were asked about danger signs like vaginal bleeding, blurred vision, constipation, respiratory difficulty, blurred vision and headache; 229 (82.4%) participants were screened for blood group and haemoglobin, 220 (79.1%) for blood glucose and hepatitis while no participant was screened for HIV and syphilis. Majority of women (98.9%) received tetanus toxoid vaccine and nutritional supplementation during their antenatal visits such as folic acid was prescribed to almost all pregnant women in order to cope with deficiency; 1.1% participants revealed that they were not given supplementation

FANC assessment of health education required that participants were asked about five areas of counselling separately and those were included nutrition and self-care emergency management, family planning, breast feeding and postnatal care. Study findings suggested that counselling was provided to participants on different topics in accordance to their number of antenatal visit. Counselling and health education on nutrition and self-care was provided to 119 (42.8%) participants of different antenatal visits (Figure-2). Among them majority (21.2%) were those coming for their first antenatal visit.

Women provided with knowledge of emergency management, were 16.9%. Among 278 participants, 197 were making their second, third and fourth antenatal visit and there was need to provide information and health education on topics like family planning, breast feeding practices and postnatal care. Counselling on family planning and breast feeding was provided to 9% and 9.4% women, respectively among total participants recruited in the study. Eighty-one (29.1%) participants were making their first visit and information on these topics was not provided to them. They were provided knowledge only on nutrition, self-care and emergency management. Among 132 participants making their third and fourth antenatal visit, only 18 (6.5%) were provided counselling on postnatal care, all those were private patients attended by specialist consultants. Women who received no information regarding postnatal care were 114 among 278 participants recruited in the study.

Association of different services with care provider's clinical qualification and designation was analysed. Findings revealed that no statistically significant association (p>0.05) exists between these variables. Test of significance were also used to check association of provider's clinical qualification on screening for danger signs and counselling of participants on different topics concerning health of women during pregnancy. Result for screening of danger signs was found not significant (p=0.150) while for counselling on all topics, the association was statistically significant. It showed that provision of health education was influenced by care provider's clinical qualification and designation. Participants dealt by specialist consultants were 0.129 times more likely to get counselling on nutrition and self-care as

compared to women dealt by PG Trainees with 95% confidence interval (CI) of 0.074–0.22

ANC services provision vary among participants of different categories that is POF employee and private patients. Most (99.1%) participants from POF patients revealed that they were not given counselling on emergency management of complications while only 16.7% from private patients reported this fact. All (100%) participants from private category received counselling on nutrition and self-care in comparison to 29% from POF patients. Health education on breast feeding was provided to only 0.9% POF patients and in case of private it was 44.4%. Information and education on family planning and postnatal care was provided to 46.3% and 33.3% private patients respectively while no POF patient received that information. A significant association (p<0.00) was also noted between ANC counselling service provision and the patient category (i.e., private or non-private).

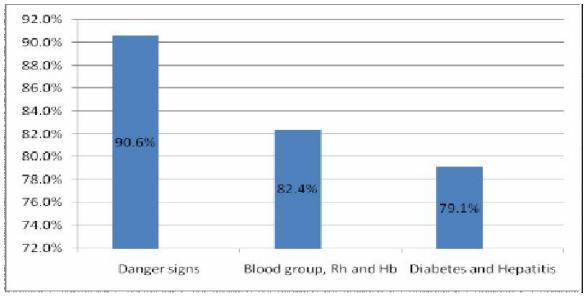

Figure-1: Screening and laboratory examination

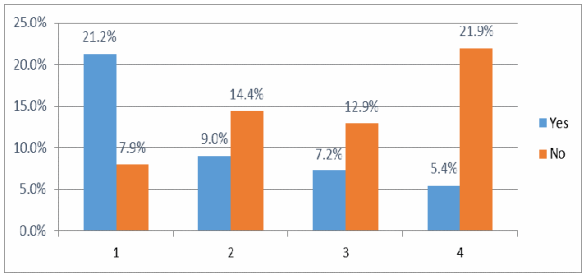

Figure-2: Percentage of women who had advice on nutrition and self-care.

DISCUSSION

ANC is an important component of Safe Motherhood Initiative and ANC services may help in prompt identification of pregnancy complications and their timely treatment. Therefore, these services are prerequisite for health of the mother and the new-born, a global health and human right priority. This study was conducted to assess quality of FANC services being provided in tertiary care setting and main focus was to check whether all necessary, globally recommended, evidence based ANC services were being provided to women seeking care at that level or not. Provision of all necessary services is itself an important and basic component of quality of care and essential for the success of efforts to scale-up maternal and child health services. A study on further analysis of 2011 Nepal demographic and health survey also suggested to emphasize over quality of antenatal services for improvement in maternal and child health.[25]

Proportion of deliveries assisted by skilled attendants is an important indicator to analyse improvements in maternal health services. Study findings revealed that women were following recommended four visits for ANC and it reflects their care seeking behaviour and delivery practices. Literature supported the fact that women having four or more ANC visits, are more likely to deliver at health facility[10,25–29] and leads towards reduction in maternal and neonatal mortality along with morbidity. ANC services were being provided in that particular facility by health care providers with different clinical qualification and designations. Majority POF patients (who were family members of POF employees), were visiting OPD of the hospital and entertained by PG trainees. Only a little proportion was provided services by professors and specialists because they were spending few hours in OPD and mostly consulted by private patients after OPD hours. As the professors and specialists were dealing with fewer patients per day so there are chances of better service provision (like counselling and health education) due to less work load. Study findings proved this fact that women receiving service from specialist consultants were more likely to get health education as compared to women dealt by PG trainees.

Patient category is also an important factor that leads towards better quality ANC services as private patients paid for services and in return they expect and demand for high quality services. Study findings revealed that private patients were getting better services in term of counselling and danger signs screening and this finding is also supported by another study conducted in Tanzania to compare antenatal services in public and private sector [19]. However, routine investigation services were equally provided to both POF and private patients including physical examination like weight, fundal height, BP, EDD, foetal growth, foetal movements, listening foetal heart sounds, mal-presentation etc. This finding is consistent with results of a recent study conducted in Hyderabad, Sindh.[24] These investigations are essential and integral part of ANC services as any complication or deviation in this regard can be life threatening.

Anaemia affects nearly half of all pregnant women in the world and is a risk factor for maternal morbidity and mortality. Anaemia, during pregnancy, increases the risk of dying from haemorrhage (a leading cause of maternal death). It is also associated

with an increased risk of stillbirth, low birth weight (LBW), prematurity, and neonatal death.[30] Findings showed that women were also examined for signs and symptoms of anaemia during their antenatal visits and provided with necessary supplementation. ANC services can integrate advice on nutrition including supplementation in settings with micronutrient deficiencies, and can encourage breastfeeding practices. Vaccination against tetanus was also provided to participants which has a larger contribution in maternal and neonatal deaths. ANC services provide an opportunity to vaccinate pregnant women with the recommended two doses of tetanus toxoid vaccination and thus preventing maternal and neonatal tetanus. Study findings disclosed that screening tests were not performed for HIV and syphilis, in spite of this known fact that at least 50 percent of women with acute syphilis suffer adverse pregnancy outcomes [31] and simple screening tests for syphilis can prevent these complications through early detection and management of disease. Syphilis control in pregnant women through universal antenatal screening and treatment of positive cases has been established as a feasible and cost effective intervention. Mother to child transmission of HIV can also be prevented through effective screening programs.

Study implies that pregnant women were provided with health education on nutrition and self-care mostly during their first antenatal visit. Providers were more oriented towards private patients regarding counselling and health education. Still only a small proportion of participants were gaining information regarding family planning services, breast feeding practices, emergency management of complications and PNC. These findings are in compliance with results of a study conducted at Lungwena Health centre in rural Malawi which also reported that women were not provided with necessary information regarding danger signs, possible complications of delivery, personal hygiene, exclusive breast feeding, plans for post-partum period, effects of sexually transmitted infections (STIs) and HIV on pregnancy outcomes.[32] Other studies also revealed inadequate provision of counselling services.[19,33]

In most cases, participants were informed about nutritional issues, balanced diet, self-care, good sleep and rest. Information regarding PNC was provided to participants during their fourth visit. Knowledge of family planning and breast feeding was being provided on second, third and fourth visits. Health education is the most important component of antenatal visits necessary for patients' compliance along with their satisfaction but unfortunately this component is not gaining attention from health care providers.

CONCLUSION

The study reveals that the health facility is providing better coverage of focused antenatal care service in surrounding areas. However, the delivery of antenatal care services to pregnant women varied to some extent. Most of the routine investigation services provided in facility were in accordance with recommended standards of optimal quality with little divergence from guidelines, such as screening for HIV and syphilis. Vaccination and necessary supplementation was also being provided to participants according to recommended schedule for vaccination and condition of patient. Staff was competent and well trained but due to heavy caseload, they were missing or ignoring some essential services like previous medical history taking, screening for danger signs in some patients. Moreover, better quality services were provided to private participants in term of counselling, health education and danger sign screening. This inequality need to be addressed by highlighting the importance of having FANC for maintaining the quality and pregnancy outcomes.

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AUTHOR'S CONTRIBUTION

FA carried out the study (study design, literature review, data collection, analysis, manuscript writing). IHT as supervisor provided his institutional knowledge and refined the methodology, contributed in manuscript review. FI and AA were involved in editing and review of the manuscript. All authors read and approved the final manuscript.

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