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Accessibility of Antenatal Services at Primary Healthcare Facilities in Punjab, Pakistan

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Abstract

Introduction: Almost one-fifth of the world's population constitutes women of reproductive age who are repeatedly exposed to pregnancy and childbearing. Many are often at high risk of illness and mortality during pregnancy and require maternal healthcare services for early detection of complications. More than 0.5 million women die every year worldwide due to pregnancy-related complications. Almost 0.03 million of them are in Pakistan. Maternal healthcare in Pakistan is poor and results in high rates of morbidity and mortality. This paper evaluates the accessibility of antenatal care (ANC) services in primary healthcare settings in the Punjab province of Pakistan during the period June 2010-August 2011.

Methods: The paper uses a cross-sectional study including mix methods (qualitative and quantitative). Nine districts were included in the project; one from each administrative tier or division. Nineteen health facilities, including two rural health centres (RHCs) and 17 basic health units (BHUs) were randomly selected from each district. The total sample was 171 health facilities. The qualitative assessment was carried out through focus-group discussions (FGDs) and in-depth interviews with clients, providers, and health managers.

Results: The reasons for the gaps in service accessibility were the distant location of facilities, a lack of transport, and inconvenient facility working hours. The issues of service accessibility were further exacerbated by socio-cultural factors such as low levels of client awareness, a lack of decision-making by clients, and the influence of spiritual healers and quacks. Health managers further pointed out weak co-ordination between vertical programmes and routine integrated health services, and a lack of human resources in distantly located facilities.

Conclusion: In order to increase the accessibility of ANC services, facility working hours must be extended and adjusted according to the convenience of clients in primary healthcare (PHC) facilities. The utilisation of ANC services can also be increased through client awareness and gender empowerment for ANC decision-making.

Keywords: Antenatal, ANC, Punjab, Pakistan, Accessibility, Availability, PHC facilities.

Introduction

Women of reproductive age, i.e. women aged 15-49 years constitute more than one-fifth of the world's population and are repeatedly exposed to pregnancy and childbearing.[1] Maternal healthcare services utilisation is important for early detection of mothers who are at high risk of illness and mortality during pregnancy as reported by the World Health Organization (WHO).[2] Women have a basic right to be protected when they undertake the risky enterprises of pregnancy and childbirth.[3] One cannot ignore the 600,000 maternal deaths that occur worldwide, every year, due to pregnancy-related complications.[4] Life-threatening complications of pregnancy are generally not preventable or predictable, but when nothing is done to avert maternal death, natural mortality is around 1,000 to 1,500 per 100,000 births.[3]

Approximately 30,000 Pakistani women die annually from pregnancy and childbirth-related complications.[5] Maternal and neonatal health are strongly interlinked. For example, 33% of neonates in Pakistan die due to maternal infections and other problems related to pregnancy and delivery.[6] The level of health among Pakistani women is alarmingly poor and contributes to both maternal and child morbidity and mortality. Recent studies estimate that the lifetime risk of maternal death for Pakistani women is one in 93.[7]

Antenatal care (ANC) utilisation in developing countries is low (65%) when compared to that of the developed countries, which is 97%. Skilled attendance at delivery is 53% in developing countries and 99% in developed

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countries. Postpartum care utilisation is 30%in developing countries as compared to 90% in developed countries.[2] In Punjab, only 53% of pregnant women have access to ANC services from medical professionals at least once during their pregnancies, and only 41% have access to postnatal care.[8] In Pakistan, access to maternal and newborn healthcare differs greatly between different socio-economic groups. Poverty, ethnic, cultural, and religious factors all have an impact on women's status and their ability to access healthcare. One of the factors associated with the under-utilisation of ANC services in Indonesia was physical distance from health facilities.[9] About ten percent of pregnant women living in urban squatter settlements in Karachi reported long distances from facilities as reasons for not receiving ANC and seven percent complained of the non-availability of transport.[10] In another study conducted in South Africa, 51.2% of women lived within walking distance of the health facility and their travelling time ranged 10-60 minutes. Of those who needed to use public transport, the fare was PKR 3-16.[11] In a rural setting of Sindh, Pakistan, 29.3% of women utilized ANC. Of those, 72.3% received ANC services from government healthcare providers. Those using household electricity and whose husbands worked white collar jobs were utilizing ANC, significantly more.[12] Regarding the ascertainment of the utilization of primary ANC services in Pakistan, it was reported that a high proportion of poor (46% for ANC) and less well-educated (33% for ANC) women were not receiving any, or less than the WHO- and nationally-recommended schedule of ANC.[13]

The availability of services is generally determined by the geographic distribution of fixed and mobile healthcare facilities and their service hours. The accessibility of services includes both the cost to users in money and time and their social acceptability. The physical accessibility of a primary healthcare (PHC) facility where the necessary staff is posted and available is defined as the proportion of the served population living within 2-5 km, or alternatively, at a 20-60minute walking distance.[14]

The study was conducted by the Research Society, Allama Iqbal Medical College (AIMC), Lahore, Pakistan and funded by the Maternal and Newborn Health Programme- Research and Advocacy Fund (RAF). The RAF is a key component of the Department for International Development (DFID) and the Australian Agency for International Development's (AusAID) and provides support to the National Maternal, Newborn, and Child Health (MNCH) programme in its efforts to achieve the fourth and fifth targets of the millennium development goals (MDGs). This research study was part of these efforts and it intended to evaluate the accessibility and availability of ANC services at the PHC level in Punjab. This data provides vital information for programmes and defines the vision and direction of health policy.

The study aimed to highlight the accessibility of ANC services that ultimately affect maternal and infant morbidity and mortality ratios. Our identification of ANC service-related accessibility may serve to identify the factors because of which Punjab has the lowest total fertility rate(TFR) and maternal mortality rate (MMR) among Pakistan's four provinces.[15] In Punjab, the TFR is 3.9 children per woman and the MMR is 227 per 100,000 live births. Identifying the precise factors that positively affect service provision and uptake in Punjab may assist in developing policy and programming interventions in other provinces.

Objectives

1. To assess the geographic accessibility of PHC facilities i.e. rural health centres (RHCs) and basic health units (BHUs) from the community;

2. To assess the accessibility of ANC services in the PHC (BHUs/RHCs) facilities.

Methodology

A cross-sectional study was conducted to assess the accessibility of ANC services in first-level care facilities. Both quantitative and qualitative research methodologies were exercised in this study. A multi-stage sampling procedure was adopted to select the districts and clusters of health facilities in each district.

District selection

All of the districts of Punjab were ranked from 1 to 36on the basis of a composite indicator that was developed from eight socio-demographic indicators.[16] These indicators included adult literacy, primary school enrolment, under-five mortality, prevalence of under-nutrition, adequate water and sanitation, the percentage of deliveries using a skilled birth attendant, and modern contraceptive use. The districts were stratified as 'high', 'medium' and 'low' on the basis of this ranking to give equal representation to all social strata. Nine districts were selected from the Punjab such that the districts of Gujranwala, Rawalpindi, and Toba Tek Singh ranked high; Sargodha, Multan, and Sahiwalranked medium; and Bahawalnagar, Vehari, and Kasurranked low.

Health facilities selection

Punjab's network of PHC facilities comprises RHCs and

BHUs. The RHCs are relatively larger PHC facilities serving 10,000-50,000 rural people while BHUs are relatively smaller health facilities providing PHC services to 5,000-10,000 rural people. One BHU is available up to almost each union council level. There are uniform packages of health services, infrastructure, and physical and human resources. Medical officers are incharge of RHCs and BHUs, and ANC services are supposed to be provided by lady health visitors (LHVs) at these facilities. In the second stage of sampling, a list of the total RHCs and BHUs was obtained for each sampled district. Of these, two RHCs and 17 BHUs were selected randomly from the sampling frame using the Center for Disease Control and Prevention's (CDC) Epi-Info® random table. Initially, 171 RHCs and BHUs were accessed for completion of facility data and interviews of health providers. In the first attempt, 154 datasets were completed. An additional 17 health facilities were visited in the second attempt due to provider non-availability, to complete the target sample.

Geographic accessibility was operationally defined as the 'percentage of health facilities with all catchment area populations falling within a distance of five kilometres of its location'. Facilities where one of the villages or towns was located further than five kilometres away, were termed inaccessible. Service availability was operationally defined as the 'percentage of health facilities where ANC service providers (LHVs or other health providers) were available and providing services at the time of survey."

Qualitative sampling

Focus-group discussions (FGDs) and in-depth interviews were conducted in the qualitative portion of the assessment. Nine FGDs for clients and nine for providers were conducted in each of the nine sampled districts. The selection criteria for clients was pregnant women who had experienced at least one pregnancy and birth process, belonged to the lower or middle social class, and came from the catchment area of the health facility. There were 12 clients in each FGD session. The selection criteria for healthcare providers (LHVs)was that they be working in RHCs or BHUs during data collection and have served for at least six months. Healthcare provider participation was voluntary and invitations were extended to them with the permission of the provincial health department. Twelve LHVs were included in each FGD. An FGD was conducted for medical officers/women medical officers at the provincial level, as well. In-depth interviews were conducted with district health managers (executive district officers for health/district officers for health) and provincial managers (director general, Health, director MNCH programme, and director MIS cell).

Data collection procedure

The data was collected using an objectively developed semi-structured questionnaire from October-November 2010.The questionnaire was pre-tested in a non-sampled district, Nankana Sahib. Eight teams were engaged for data collection and each consisted of one team leader/supervisor and two surveyors/interviewers. A qualitative assessment team comprised two sociologists and one public health consultant. All teams were provided extensive training in two separate three-day workshops, one for qualitative assessment, and the other two for quantitative assessment. Two regional co-ordinators, a public health consultant, and the principal investigator carried out field monitoring. Qualitative data was collected from December 2010 to February 2011.

Data entry and analysis

Data processing comprised desk review, data entry in SPSS®, the construction of ANC indicators, the ranking of indicators, and the final analysis. Data validation was done by inspecting ten percent of records for accuracy. A uni-variate analysis was done to describe the frequency and percentage by type of facility and by districts. The gaps in services were described in terms of 95% confidence limits.

Results
Quantitative findings

The analysis revealed that only 19% of the total health facilities (95% CI: 13.3 to 25.5%) were fulfilling the criteria of geographic accessibility where the catchment area population was falling within a five kilometre radius. Analysis by type of facility revealed that only 28% of RHCs and 18% of BHUs were located within the specified radius. The accessibility of RHCs was relatively better than that of BHUs (Table). There was a wide range

Table: Frequency of health facilities showing availability and accessibility of antenatal care services.

	Overall		RHCs		BHUs	
No. of facilities	171		18		153	
	n	%	n	%	n	%
Availability of ANC services						
Facilities providing ANC services	154	90	18	100	136	89
Accessibility of ANC services						
Facilities: all catchment population within five kilometres	32	19	5	28	27	18

ANC= Antenatal Care; RHC= Reproductive Health Centre; BHU= Basic Health Unit.
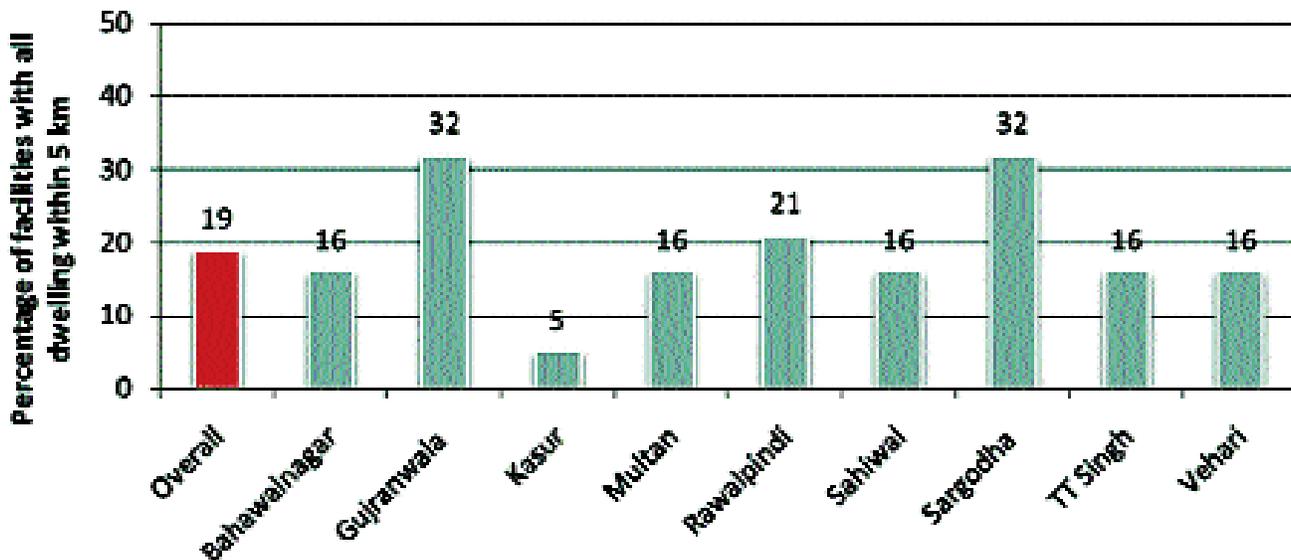
Figure-1: Facilities of nine districts with all dwellings within five kilometres.

of variation of accessibility and availability of ANC services in the district-wise comparison, but no specific regional trends were observed in ANC service accessibility. The relative percentage within the accessibility range was higher for districts Gujranwala and Sargodha, followed by Rawalpindi. Only a few facilities in the rest of the districts fulfilled the accessibility criteria. The inferential analysis indicated a large gap in ANC service accessibility, which varied 74%-87% of facilities at 95% confidence limits (Figure-1).

Of 171 randomly selected PHC facilities initially accessed by the data collection teams, ANC services were available in 90% (154), and ANC clients were available in 88% (15) of health facilities. Antenatal care was not being provided in ten percent (17) of the facilities due to the non-availability of LHVs or other healthcare providers. Inferential analysis showed that the overall availability gaps of ANC services in Punjab varied 6.1%-15.6% at 95% confidence limits. There was a wide range of variation in service availability gaps in different districts. The service
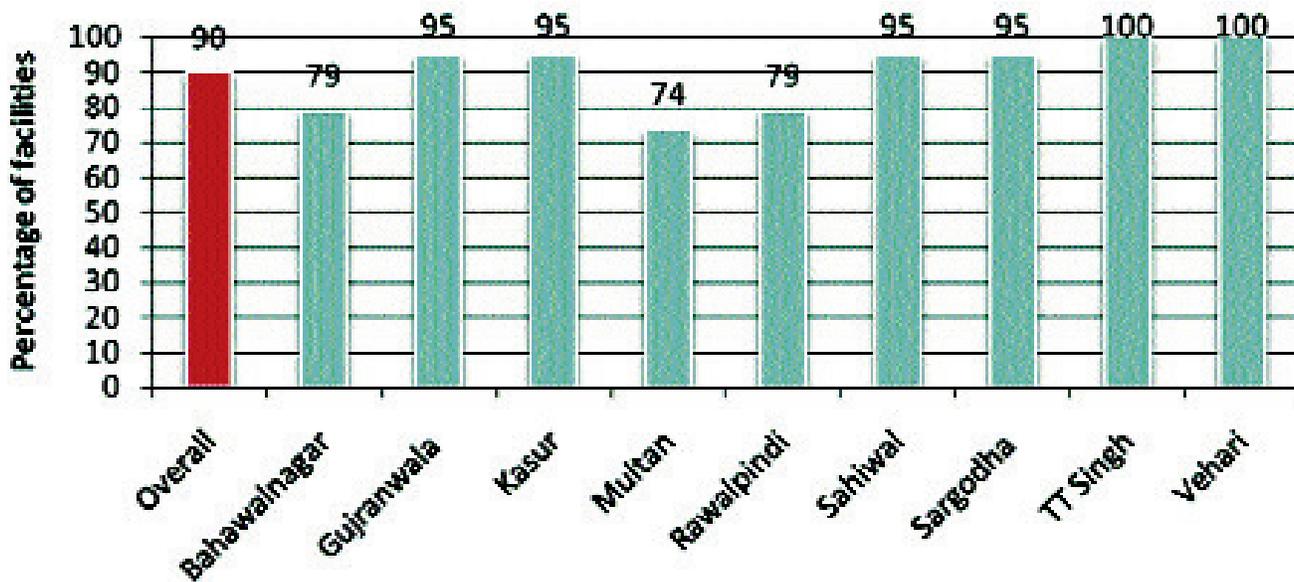

Figure-2: Frequency of availability of antenatal care services in primary healthcare facilities.

availability gaps were the highest in district Multan (26.3%), followed by district Bahawalnagar and Rawalpindi (21.1%, each). All of the health facilities in districts Toba Tek Singh and Vehari were providing ANC services (Figure-2). Comparing by types of health facilities, all of the RHCs were providing ANC services, and non-availability was observed at the BHU level only (Table).

Qualitative findings

The views of the clients, providers, and health mangers expressed during FGDs and in-depth interviews regarding accessibility and availability are summarised below.

Client perceptions

♦ Facilities are distantly located;

♦ Transport services are neither available nor affordable;

♦ There is uncertainty in the availability of concerned staff at health facilities;

♦ Facility working hours are inconvenient and insufficient for ANC services;

♦ The decision to avail ANC services is culturally privileged to husbands and mothers-in-law.

Healthcare provider perceptions

♦ Work environments are non-conducive due to a lack of incentives, transport, facility resources, security, and children's educational facilities;

♦ Clients are not fully empowered or aware of health service utilisation;

♦ Community providers are available around the clock and help with housework and gives massages, but these services cannot be equated to ANC services.

ANC provider views (lady health visitors)

♦ There are staff shortages at facilities running around the clock. Midwives, dispensers, and sanitary workers are often absent. We have to run the dispensary, conduct deliveries, and do the cleaning;

♦ Doctors' visits to BHUs are very infrequent. It is just once a month and pregnant women cannot necessarily visit the BHU on that specific day;

♦ BHUs are located in the jungle. How can an LHV reach a BHU to work?;

♦ A few buildings (of the health facilities) are just four walls or virtually a heap of bricks;

♦ There is no public transport facility available to reach most of the BHUs situated in distant locations.

Health manager perceptions

♦ Health facilities are located outside villages/towns;

♦ There is a lack of transport and fuel for monitoring and supervision;

♦ There is a lack of co-ordination between vertical programmes and routine integrated health services at the district level;

♦ There is a low level of client awareness and decision empowerment to avail ANC services;

♦ Spiritual healers and quacks hold influence over people.

Discussion

The provision of ANC services to pregnant women is one of the main interventions in the reduction of maternal and newborn deaths through early recognition and management of high-risk pregnancies. International health agencies are striving for the achievement of the MDGs through various interventions, and ANC provision is one of them. Accessibility and availability is a major hindrance in the coverage and quality of ANC services in developing countries. Antenatal care utilisation (65%) in developing countries is low when compared to that of developed countries, where it stands at 97%. Skilled attendance at delivery is 53% in developing countries and 99% in developed countries. Postpartum care utilisation is 30%in developing countries compared to 90% in developed countries, as reported by WHO (2007). This study explored the factors that compromise the accessibility and availability of ANC services. The location of health facilities plays a major role in the utilisation of services. The study results indicated that around one-fourth of first-level care facilities in Punjab cater to villages which are within a five kilometre distance, but about three-fourths are inaccessible to the majority of the population in the catchment area. Provincial health managers and health facility heads said in the qualitative assessment portion of the study that BHUs were generally located away from villages and towns. This made them inaccessible to prospective clients. The inherent anomaly in the PHC infrastructure network is that the facilities were constructed on distantly located lands donated by local community leaders or philanthropists. Clients repeatedly pointed out the distance issue and how the problem was exacerbated

by the non-availability and expense of transport facilities. However, location and distance are not the only problems for client accessibility. Facilities become redundant due to a lack of healthcare staff retention and neglected monitoring by district health managers. On the other hand, community-based providers were available around the clock and were much more accessible to clients than RHCs and BHUs, but were unable to provide the full range of ANC services. Antenatal care services need diagnostic tests that are essential for the early diagnosis of high-risk pregnancies, but they are not possible at home by community-based care providers.

Although the study was conducted in rural areas, availability and accessibility is compromised in urban slums, as well. In a study conducted in urban squatter settlements of Karachi, Pakistan, 28% of respondents not receiving ANC were ignorant of its importance, eight percent were not permitted by their families, ten percent complained of distant facilities, and seven percent were unable to receive the services due to transport issues.[10] It was reported in South Africa that 51.2% of women lived within walking distance of health facilities and their travel times ranged between ten and 60 minutes.[11] Apart from the geographic inaccessibility of facilities, a number of socio-cultural factors hindered the utilisation of ANC services. The major social issue revealed by the qualitative assessment was the lack of clients' decision-making power for the utilisation of ANC. Mothers-in-law were the key decision-makers of ANC service utilisation, sometimes in consultation with their sons. Other factors contributing to the under-utilisation of ANC services were the lack of client motivation, the attitude of facility staff, and the lack of transport.

Although the availability of services was reported in 90% of health facilities at the time of survey, clients in the FGDs reported two major issues regarding service availability; the uncertainty of healthcare provider availability and the inconvenient and limited facility working hours. In Punjab, the services were available from 8.00 am to 2.00 pm, only. The qualitative findings revealed that the facility timings were very limited and not convenient for clients. Most clients are busy with housework in the morning and cannot avail facility services until at least 11.00 am. Government officials claim PHC services in these health facilities are available around the clock, but all stakeholders, clients, providers, and health managers confirmed that services were not available after 2.00pm. The facility managers and health managers stated that the currently sanctioned and available staff in the facilities was not sufficient to provide services around the clock on a rotation/shift basis.

Conclusion

The availability and accessibility of health services is influenced by a number of managerial and social factors. The managerial factors are distant locations and a lack of affordability and availability of transport services. Primary healthcare centre working hours are limited, inconvenient for clients, or incompatible with cultural traditions and norms.

Social factors include a lack of client self-empowerment to avail ANC services as mothers-in-law appear to be the most influential persons in decision-making regarding ANC services. Health facility staff is often unavailable, or is unfriendly and insensitive towards clients. Another factor negatively influencing client referrals to PHC facilities is the highly influential and traditional community-based service provider. These include dais, LHWs, and community-based midwives (CMWs) who are available around the clock.

Recommendations

Provincial and district health managers and policymakers should consider the multiple factors that affect ANC service accessibility and plan interventions to address them. Priority should be given to ensure accessible locations for new health facilities. If the cost of renovating an existing facility is almost as much as constructing a new facility, then the geographic accessibility of the facility should be assessed. If required, the facility should be relocated and built in a more geographically accessible location. Facility working hours must be extended and adjusted according to the convenience of clients.

The retention of human resources in hard areas must be addressed through innovative incentive packages and by increasing the weightage of these services for opportunities in higher qualifications and promotions. Health officers must be given both authority and responsibility. The market dynamics of the relationship between healthcare providers and healthcare receivers need to be addressed to make the facilities more accessible.

Local non-government organizations (NGOs) and social workers must be involved to improve client awareness and empower them to make timely decisions. The training ofproviders, motivation, and frequent monitoring are required to sensitise them [providers] so that they encourage clients to utilise health facility

services. Community-based service providers must be targeted for advocacy and motivation to refer clients to public health facilities for ANC services.

Conflict of interest

There are no conflicts of interest.

References

1. AbouZahr C, Wardlaw T. Maternal mortality in 2000: Estimates developed by WHO, UNICEF, and UNFPA. Geneva: Dep. of Reproductive Health and Research, WHO; 2004.
2. Say L. Maternal mortality in 2005: Estimates developed by WHO, UNICEF, UNFPA, and the World Bank. Geneva: World Health Organization; 2007.
3. Fathalla MF. Human rights aspects of safe motherhood: Best practice and research. Clinical Obstetrics & Gynecology 2006;20(3):409-19.
4. Desai J. The cost of emergency obstetric care: Concepts and issues. International Journal of Gynecology & Obstetrics 2003;81(1):74-82.
5. Khan YP, Bhutta SZ, Munim S, Bhutta ZA. Maternal health and survival in Pakistan: Issues and options. Journal of Obstetrics & Gynaecology Canada 2009;31(10):920-9.
6. Bhutta Z, Darmstadt G, Ransom E, Starrs A , inker A. Basing newborn and maternal health policies on evidence. 2003. Report No.: Crump S (ed.).: JHPIEGO.
7. Anthony D et al. The state of the world's children 2011: Adolescence: an age of opportunity. New York (NY): United Nations Children's Fund (UNICEF); 2011.
8. Multiple indicator cluster survey (MICS) 2007-2008. Lahore, Pakistan: Bureau of Statistics, Government of The Punjab; 2009.
9. District multiple indicator cluster survey (MICS) 2004. Lahore, Pakistan: Planning and Development, Government of Punjab; 2004.
10. Titaley CR, Dibley MJ, oberts CL. Factors associated with underutilization of antenatal care services in Indonesia: results of Indonesia demographic and health survey 2002/2003 and 2007. BMC Public Health 2010;10:485.
11. Nisar N, hite E. Factors affecting utilization of antenatal care among reproductive age group women (15-49 years) in an urban squatter settlement of Karachi. J Pak Med Assoc 2003;53(2):47-53.
12. Sibeko S, Moodley J. Healthcare attendance patterns by pregnant women in Durban. SA Fam Pract 2006;48(9):7.
13. Fatmi Z, Awan BI. Demographic, socioeconomic, and environmental determinants of utilization of antenatal care in a rural setting of Sindh, Pakistan. J Pak Med Assoc 2002;52(4):138-42.
14. Ahmad AM. Primary antenatal healthcare services, maternal health, and birth outcomes in rural Pakistan. School of Population Health, Faculty of Medicine, Dentistry, and Health Sciences, The University of Melbourne; 2012.
15. Moazzam A, Bhatti MA, Kuiowa C. Challenges in access to and utilization of reproductive healthcare in Pakistan. J Ayub Med Coll Abbotabad 2008;20(4):3-7.
16. Pakistan Demographic and Health Survey (PDHS) 2006-7. Islamabad, Pakistan: National Institute of Population Studies (NIPS); Macro International Ltd.; 2008.