ORIGINAL ARTICLE

FACTORS AFFECTING UTILIZATION OF ANTENATAL CARE: THE OPINION OF PREGNANT WOMEN

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Background: Antenatal care is one of the four pillar initiatives of the Safe Motherhood. This study was carried out to identify the factors affecting the utilization of antenatal care by expectant women of child bearing age and women's opinion regarding antenatal care. **Methods:** A cross-sectional questionnaire based survey was conducted from October 2009 to April 2010 at Civil Hospital, Karachi where 250 pregnant women were included who registered for antenatal care after 14 weeks of gestation. Miscarriages during the study were excluded. The subjects were further classified on basis of residential, education status, and number of visits they paid for antenatal care. **Results:** There were 250 subjects who used preterm delivery antenatal care, and those who followed excess, standard and fewer visits were 125 (60%), 62 (29%), and 63 (30%) respectively. Multipara, urban residents, and well-educated women showed high number of standard visits. Women who were already diagnosed to have antenatal problems (46%) paid standard visits and previous negative birth experience (50%) paid excess visits. The parity levels were significantly correlated with level of education (r=0.5−0.8) and residential status (r=0.6−0.8). **Conclusion:** The inadequate use of antenatal care is associated with high parity, low education and poor socioeconomic conditions. Public awareness programme for better antenatal standards is suggested.

Keyword: Antenatal care, Parity, Primipara, Multipara, Safe Motherhood, Health Facility

INTRODUCTION

Antenatal care is one of the four pillar initiatives of the Safe Motherhood. It provides reassurance, education support for the women on screening programs and detects the problems that make the pregnancy high risk.[1] There are many socioeconomic and cultural factors which act as barriers to use of antenatal care.[2] Although it cannot be claimed that antenatal care is the only solution for the high maternal and perinatal death, it can help to reach the Millennium Development Goals for the maternal and child mortality.[3] World Health Organization recommended four antenatal visits for the low risk pregnancy.[4] There is still debate regarding the optimal number of visits for the antenatal care.[5] Early commencement of antenatal care by pregnant women as well as regular visits has the potential to affect maternal and foetal outcome positively.[6]

The recommended gestational age for booking is within the first 12 weeks of pregnancy.[7] Many developing countries do not have national guidelines on antenatal care but commencement of antenatal care within the first 14 weeks of gestation is widely accepted as early.[8] Commencement of focused antenatal care before 14 weeks of gestation allows for early commencement of health education and counselling on expected physiological changes, the normal course and possible complications of pregnancy, labour and puerperium.[9]

In our country, probably one of the main causes of human resource loss is the maternal mortality and death of child under the age of one year; this includes prenatal and neonatal periods.[10] Factors leading to these deaths have not been systematically analysed. In order to ascertain the dilemma, this loss needs to be diagnosed. The aim of this study was to determine the factors affecting utilisation of antenatal care services.

METHODS

Pregnant women from Out-patient Department of Civil Hospital Karachi were selected by convenience sampling for identification of antenatal experiences and associated factors. Women aged 15–45 years were included. All ethical standards were followed for obtaining data and handling of patients.

After exclusion of miscarriages, preterm delivery, missing information in the birth register and those who lost record of information of the follow up, 250 eligible women were included in the study. The participating women were further classified on the basis of residential status (urban and rural areas), education (high being graduate, and low being up to matriculate) and visits they paid for antenatal care (fewer visits being <3, standard visits 4 to 7, and excess above 7 (roughly adopted for Karachi city based on WHO Reproductive Health Library[11]).

A questionnaire based survey was used to gather data from participating women after 14 weeks of gestation. All participating women who could fill the questionnaire did it by themselves; otherwise interviewer asked and filled for them. The questionnaire included women's socio-demographic background, obstetrical and medical history, their preference regarding the visit on doctor's recommendations, and opinion regarding the antenatal care.

Data were entered in a performa and analysed using SPSS-15. Data were expressed in terms of frequency and percentage. A non-parametric correlation test (Kendall's) was employed to determine association of parity with educational and residential statuses; and p<0.05 was considered statistically significant.

RESULTS

Socio-demographic variables are presented in Table-1. The highest number of women (52%) belonged to age group 20–29 years. The least number of women, i.e., (2%) were aged >39 years. Forty-eight percent of all participants were in lower, and 52% in higher income group. Forty-four percent of the participants belonged to rural areas while 56% of them lived in urban areas. Most of them (68%) belonged to low qualification (under matriculation). Women with high level of education (graduates) represented 32% of the total.

Table-1: Frequency distribution of socio-demographic variables of pregnant women

Variables	Frequency (%)
Age (year)	
<20	35 (14)
20−29	130 (52)
30−39	80 (32)
>39	5 (2)
Income Groups	
Lower	120 (48)
Higher	130 (52)
Residential area	
Rural	110 (44)
Urban	140 (56)
Educational level	
High (Graduation)	80 (32)
Low (up to Matriculation)	170 (68)

Out of 250 participants, 63 (30%) paid fewer visits, 62 (29%) paid standard visits, and 125 (60%) paid more than the scheduled visits. The highest number (54%) of standard visits was carried out by the women from urban areas. The highest number (63%) of standard visits was paid by high education class. The low education class paid fewest antenatal visits. Multiparas were highest (60%) in standard visits. The primiparas showed less number of standard visits but they showed highest number of standard visits (50%) among their own categories of visits. Among the pregnant women diagnosed for some medical problem, 46% paid highest number of standard visits. The women who were not diagnosed for any medical problem, paid less number of standard visits, showing highest (56%) in the category of fewer visits. Out of 50 (20%) women having previous negative birth experience 6 (12%) had fewer visits, 19 (38%) had standard and 25 (50%) had excess antenatal visits. Out of 200 women with a previous positive birth experience, 90 (45%) paid fewer visits, 70 (35%) paid standard and 40 (20%) paid excess antenatal visits (Table-2).

The relationship of parity was also tested using Kendall's test with both the educational and residential statuses. High level of education and urban residential status showed better correlation than low level of education and rural residential status. Highest correlation (r=0.858) was found for primipara women of urban area, and lowest (r=0.557) for primiparas with low level of education (Table-3).

Table-2: Association of demographic and gynaecological variables with hospital visits [n (%)]

Variables	Type of visits for Antenatal Care		
	Fewer (<3 visits) n=63	Standard (7 Visits) n=62	Excess (above 7) n=125
Residential Area			
Rural area 110 (44)	60 (55)	30 (27)	20 (18)
Urban 140 (56)	35 (25)	75 (54)	30 (21)
Educational Level			
High 80 (32)	5 (6)	50 (63)	25 (31)
Low 170 (68)	80 (47)	60 (35)	30 (18)
Parity			
Primipara 100 (40)	10 (10)	50 (50)	40 (40)
Multipara 150 (60)	50 (33)	90 (60)	10 (7)
Pregnancy associated clinical problems			
Not Diagnosed 180 (72)	100 (56)	45 (25)	35 (19)
Diagnosed 70 (28)	8 (11)	32 (46)	30 (43)
Previous Birth Experience			
Negative 50 (20)	6 (12)	19 (38)	25 (50)
Positive 200 (80)	90 (45)	70 (35)	40 (20)

Table-3: Correlation coefficients obtained by Kendall's test between parity and educational level/ residential status

Statistical Parameters	Education vs parity				Residential status vs parity			
	High level		Low level		Urban		Rural	
	Primi	Multi	Primi	Multi	Primi	Multi	Primi	Multi
Corr. Coefficient	0.827	0.817	0.557	0.727	0.858	0.761	0.608	0.660
***p* (2 tailed)**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Number	80	80	100	150	100	110	100	120

Primi=1st time pregnant, Multi=2nd or later pregnancy. All values of correlation are significant at p=0.01. Different values of n depend upon responses related to individual variables

DISCUSSION

In the present study maximum women of child bearing age were 20−29 year old. In Bangladesh and Bengal State of India the age of most child bearing women is between 15 and 25.[12] This is primarily due to early marriage in these areas. The scenario is different in developed countries where it was reported in a study[13] that maximum child bearing age ranges between 28 and 38 years. In the present study the age range is intermediate between ranges reported for Bangladesh, India and developed countries. In our opinion, it might be reflecting solemnisation of marriage only after completing education to the required level as per family or financial affordability, especially in urban areas of Karachi. It is important to note that usually, Matric/Inter level of education is achieved at 18−20 years of age.[14]

Making antenatal visit is significantly associated with parity, educational level and residential area. The higher values of correlation coefficient for women having higher level of education clearly indicate that education has uplifted their thoughts to be careful for their better health conditions during pregnancy and to have normal and healthy child birth.[15] The values of correlation coefficient determined for residential status in our study are also higher for their residence in urban areas for both primipara and multipara. It also indicates that along with better education the better residential status (indicating better socioeconomic conditions) is

also a factor that counts in following standard visits to the health care centres during pregnancy.[16,17] Fewer visits were found associated with women having more children (33%), low educational level (47%), and women belonging to rural area (55%). These figures are very close to those reported by South-East Asia Association of Obstetricians and Gynecologists.[18]

Our study also shows that the number of antenatal visits depends on women's individual obstetric/medical condition and experiences. Women having first time pregnancy, on their own preference, were associated with more visits. Primiparas with previous negative birth experience (miscarriages and preterm deliveries) made more visits which is in line with the other studies[19,20].

Studies from developed[21], developing[22,23], and our neighbouring[24,25] countries have reported demographic and socioeconomic influence on the utilisation of antenatal care. The data presented in this study not only confirms the association of these factors with utilisation of antenatal care, but also found better correlation for these socioeconomic factors with parity. Our study also indicates that antenatal care visits depend upon the diagnosis of antenatal problems during pregnancy; and previous negative birth experience.

CONCLUSION

Main hurdle in the maintenance of health of pregnant women and healthy birth is lack of education and financial constraint along with non-awareness to medically important health principles. Choice of pregnant women to obtain health care also depends upon diagnosis made during pregnancy and history of parity. Public awareness programme is suggested in a simplified way to attain better antenatal standards.

REFERENCES

1. Myer L, Harrison A. Why do women seek antenatal care late? Respective from rural South Africa. J Midwifery Women's Health 2003;48(4):268−7.
2. Fekede B, G/Mariam A. Antenatal care services Utilization and factors associated in Jimma Town (South West Ethiopia). Ethiop Med J 2007;45:123−33.
3. Abou-Zahr CL, Wardlaw T. Antenatal care in developing countries: Promises, achievements and missed opportunities: an analysis of trends, levels and differentials, 1990−2001. Geneva, WHO; 2003.
4. Villar J, Ba'aqeel H, Piaggio G, Lumbiganon P, Miguel Belizán J, Farnot U, *et al*. Antenatal Care Trial Research Group: WHO antenatal care randomized trial for the evaluation of a new model of routine antenatal care. Lancet 2001;357(9268): 1551−64.
5. Carroli G, Villar J, Piaggio G, Khan ND, Gulmezoglu M, Mugford M, *et al*. WHO Antenatal care Trail Research Group: WHO systematic review of randomized controlled trials of routine antenatal care. Lancet 2001;357(9268):1565−70.
6. Yousif EM, Abdul Hafeez AR. The effect of antenatal care on the probability of neonatal survival at birth, Wad Medani Teaching Hospital Sudan. Sudanese Journal of Public Health 2006;1(4):293−7.
7. WHO, UNICEF. Antenatal Care in developing Countries: Promises, Achievements and Missed Opportunities: An Analysis of Trends, Levels, and Differentials: 1990−2001. Geneva, New York: WHO & UNICEF; 2003.
8. Low P, Paterson J, Wouldes T, Carter S, Williams M, Percival T. Factors affecting antenatal care attendance by mothers of Pacific infants living in New Zealand. N Z Med J 2005;118:1216.
9. Okunlola MA, Owonikoko KM, Fawole AO, Adekunle AO. Gestational age at antenatal booking and delivery outcome. Afr J Med Sci 2008;37(2):165−9.
10. Anand S, Barnighausen T. Human resources and health outcome: cross-country econometric study. Lancet 2004;364(9445): 1603−9.
11. The WHO Reproductive Health Library. Alternative versus standard packages of antenatal care for low-risk pregnancy. RHL commentary by Mathai M. http://apps.who.int/rhl/pregnancy_childbirth/antenatal_care/general/cd000934_mathaim_com/en/index.html
12. Swedish Federation of Obstetricians and Gynecologists. Antenatal statistics. [Retrieved from http://ww.sfog.se]
13. Navaneetham K, Dharmalingam A. Utilization of maternal health care services in Southern India. Soc Sci Med 2002;55(10):1849–69.
14. Anita G, Pragti C, Kannan A, Gayatri S. Determinants of utilization pattern of antenatal and delivery services in an urbanized village of East Delhi. Indian J Prev Soc Med 2010;41:(3 and 4):240−5.
15. Ukwuma MC. Multiparity and childbirth complications in rural women of Northeastern Nigerian origin. JPBS 2012;2(3):1−4.
16. Toan KT, Chuc TKN, Hinh DN, Eriksson B, Goran B, Karin G, *et al*. Urban-rural disparities in antenatal care utilization: a study of two cohorts of pregnant women in Vietnam. BMC Health Serv Res 2011;11:120.
17. Kishk NA. Knowledge, attitudes and practices of women towards antenatal care: rural-urban comparison. J Egypt Public Health Assoc 2002;77(5−6):479−98.
18. Backe B. Overutilization of antenatal care in Norway. Scand J Public Health 201'29:129−32.
19. Ware H. Effects of maternal education, women's roles, and child care on child mortality. Population and Development Review 1984;10(Supplement):191−214.
20. Simkhada B, VanTeijlingen ER, Porter M, Simkhada P. Factors affecting the utilization of antenatal care in developing countries: systematic review of the literature. J Adv Nurs 2008;61(3):244−60.
21. Kiely JL, Michael D, Kogan M. Prenatal care, reproductive health of women. URL: http://www.cdc.gov/reproductivehealth/ProductsPubs/DatatoAction/pdf/rhow8.pdf
22. Achadi E, Scott S, Pambudi ES, Makowiecka K, Marshall T, Adisasmita A, *et al*. Midwifery provision and uptake of maternity care in Indonesia. Tro Med Int Health 2007;12(12):1490−7.
23. Titaley CR, Dibely MJ, Roberts CL. Factors associated with non-utilization of postnatal care services Indonesia. J Epidemiol Community Health 2009;63(10)827−31.
24. Bloom S, Lippeveld T, Wypij D. Does antenatal care make a difference to safe delivery? A study in Uttar Pradesh, India Health Policy 2007;14(1):38−48.
25. World Health Organization. Neonatal and perinatal mentality: country, regional and global estimates. World Health Organization, 2006.

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