

Comparative study of Knowledge, Attitude and Practices among Antenatal Care Facilities utilizing and non-utilizing women

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Abstract

Objective: To compare the knowledge, attitude and practices among antenatal care facilities utilizing and non-utilizing women, aged 15-49 years.

Methods: A Cross-sectional survey was conducted between October 2003 and April 2004, including 200 married women in the age range 15-49 years. Knowledge, attitude and practices of women utilizing and not utilizing antenatal care facilities during their previous pregnancy were compared by calculating odds ratios and 95% confidence intervals. P values were obtained by doing chi-square test.

Results: Pallor was significantly lower among women utilizing antenatal care (57%) as compared to those who were not (77.6%). (O.R 0.38 95% CI(0.18-0.81) p value 0.02). Tetanus toxoid coverage was higher among women utilizing antenatal care (92%) compared to those who were not (59.2%) (O.R 10.8 95% CI(4.5-26.2). Knowledge about danger signals in pregnancy and realization of the importance of eating a healthy diet during pregnancy was significantly higher among women utilizing antenatal care.

Conclusion: Lesser prevalence of Anaemia and better tetanus toxoid coverage was seen among women attending antenatal care facilities. Identification of danger signals in pregnancy and recognition of nutritional demands of pregnancy are better understood by women utilizing antenatal care facilities (JPMA 55:53;2005).

Introduction

Associations between availability and use of antenatal services have been shown in various types of epidemiological studies. Hospital case series¹⁻³ and confidential enquiries into causes of maternal mortality frequently identify lack of antenatal care as a risk factor.⁴⁻⁶ Case-control studies of maternal deaths in developing countries also show an association with lack of antenatal care.^{7,8}

Almost 90% of maternal deaths occur in developing countries.¹⁰ While many women die because they do not receive the right medical care, good percentages die because they do not get that care fast enough. In most cases this is due to the fact that pregnant women, their families and the community in general, do not know about the danger symptoms and signs that can occur during pregnancy, labour or the puerperium.⁹ Four pillars of WHO Safe Motherhood Initiative include provision of Antenatal care facilities, clean and safe delivery, family planning and contraception and provision of emergency obstetric care.

The objective of this study was to compare the knowledge, attitude and practices (KAP) among women attending and not attending antenatal care clinics with special reference to recognizing the danger signals during pregnancy.

Methods

A cross-sectional survey was carried out between October 2003 and April 2004, including 200 married women (100 from each section) in the age range 15-49 years. Two urban squatter settlements of Islamabad were included in this study. One of the settlements studied was in G-7/1 sector and the other one in G-8/1 sector of Islamabad. St. Thomas Community Health Network is running a Primary Health Care program in these areas and assistance is provided by Shifa College of Medicine and Falahee clinic (Shifa Foundation) in providing preventive, curative and referral facilities to the residents. Married women of reproductive age (15-49 years) resident of squatter settlements at G-7/1 or G-8/1 who were currently pregnant or had experienced pregnancy at least once were included in the study.

Sample size was calculated using Epi-Info 6.0. Using the assumption that 85% women would be using antenatal care. Keeping worst acceptable as 80% and the population size as 10,000, the sample size for 95% confidence interval came out to be 192. We increased the sample size to 200 households.

Starting from the 1st house, we picked up every fourth house in the area till the desired sample size of 100 households was reached in one area of study. The same process was repeated in the other area of study.

KAP of women regarding danger symptoms and signs and dietary practices during pregnancy, presence or absence of pallor, tetanus toxoid immunization, were treated as dependent variables. Antenatal care received or not during previous pregnancy, socioeconomic status, educational level of wife and husband, access to antenatal health care facilities were treated as independent variables. Pallor was checked by examining the conjunctiva of eye and palm of hands, as a proxy measure of the status of Haemoglobin. Although we have not come across studies which have relied purely on physical examination for determination of anaemia. Estimation of pallor by physical examination might be regarded as a crude estimate of anaemia among the study participants.

The survey was conducted by medical students using a pre-designed, structured questionnaire who were properly trained in interviewing technique. All the questionnaires were checked at the site of the survey daily for accuracy and completeness by the research supervisors. If any data was found missing, the interviewers went back to the household for the information if possible.

All data was entered in SPSS (Statistical package for Social Sciences) version 10.0 (SPSS, Chicago, Illinois, USA). The data was re-validated and later analyzed. Cross tabulations were obtained in order to compare women receiving and not receiving antenatal care with respect to the various variables under study and chi-square statistics and odds ratios with 95% confidence intervals were obtained.

The study was discussed between the Researchers Shifa College of Medicine and the Administrator, St. Thomas Community Health Network, Islamabad. The administration of St. Thomas Community Health Network allowed us to carry out this study. In addition informed written consent was taken from each participant of the study and kept in record.

Results

The mean age of women in our study was 29.57±7.1 years. Mean family income per month was 3438±1591 Pakistani Rupee (or 57.3 ± 26.5 US \$) and 69.5% of the women were illiterate with majority (81.5%) being housewives. Antenatal care used in any of the previous pregnancy was in 151(75.5%) women.

Table 1 shows that pallor was significantly lower among women using antenatal care (57%) as compared to those who were not (77.6%) (p value 0.02). Tetanus toxoid coverage was higher among women using antenatal care (92%) compared to those who were not using antenatal care (59.2%) (p value 0.01).

We studied two urban slum areas, both having church dispensary facility free of cost. There was no significant difference between these two areas regarding utilization of antenatal care facility during current or previous pregnancies as well as level of awareness regarding the importance of antenatal care.

Comparison of women who received and did not receive antenatal care in their previous pregnancy was made by knowledge about the danger signs in pregnancy (Table 2).

Statistically significant difference was found among women who received antenatal care as compared to those who did not in recognizing fever (OR=2.8, 95%CI 1.4-5.5), persistent vomiting (OR=2.35, 95%CI 1.19-4.64) and dizziness and fainting (OR= 1.18, 95 CI 0.57-2.42) as danger signs in pregnancy. There was no significant difference between the two groups with regards recognizing severe abdominal pain and haemorrhage as danger sign in pregnancy.

Knowledge and practices of women who received and those who did not receive antenatal care were compared with regards dietary practices during pregnancy. (Table 3).

Table 1. Presence of pallor and tetanus toxoid immunization: comparison.

	Received ANC (n=151)	Did not receive ANC (n=49)	Odds ratio (95% CI)	p value*
Pallor present	86 (57%)	38 (77.6%)	0.38 (0.18-0.81)	0.02
Received Tetanus Toxoid injection	142 (92%)	29 (59.2%)	10.8 (4.5-26.2)	0.000

*P-value obtained by Chi-Square test.

ANC = antenatal care

Table 2. Comparison of women who received and did not receive antenatal care in their previous pregnancy by knowledge about danger signs in pregnancy.

Signs and Symptoms	Received ANC (n=151)	Did not receive ANC (n=49)	Odds ratio (95%CI)	p value *
Fever in pregnancy	114 (76%)	26 (53.1%)	2.8 (1.4-5.5)	0.004
Persistent vomiting	113 (75.8%)	28 (57.1%)	2.35 (1.19-4.64)	0.02
Severe abdominal pain	112 (74.7%)	33 (67.3%)	1.43 (0.71-2.88)	0.42
Haemorrhage	112 (74.7%)	35 (71.4%)	1.18 (0.57-2.42)	0.79
Dizziness & fainting	114 (76%)	29 (59.2%)	2.18 (1.1-4.32)	0.03

*P-value obtained by Chi-Square test.

ANC = antenatal care

Table 3. Comparison of women who received and did not receive antenatal care in their previous pregnancy by knowledge and practices.

Factor	Received ANC (n=151)	Did not receive ANC (n=49)	Odds ratio (95%CI)	p value *
Increased intake of diet	100 (62.2%)	17 (34.7%)	3.69 (1.87-7.21)	0.000
Increased intake of proteins	95 (63%)	20 (40.8%)	2.46 (1.27-4.75)	0.01
Increased intake of fruits	98 (65%)	17 (34.7%)	3.48 (1.77-6.84)	0.000
Increased intake of vegetables	104 (68.9%)	22 (44.9%)	2.72 (1.40-5.25)	0.004
Increased intake of milk	98 (65%)	23 (47%)	2.09 (1.08-4.01)	0.04
↑ intake of meat prevents anaemia	110 (72.8%)	19 (38.8%)	4.23 (2.15-8.34)	0.000
↑ intake of green leafy vegetables prevents anaemia	114 (75.5%)	26 (53.1%)	2.72 (1.39-5.34)	0.005
Used Iron supplementation	117 (77.5%)	23 (47%)	3.89 (1.97-7.66)	0.000
Used Vitamin supplementation	11 (73.5%)	23 (46.9%)	3.13 (1.61-6.11)	0.001

*P-value obtained by Chi-Square test.

ANC = antenatal care

Knowledge about increased intake of diet (OR=3.69 95% C.I 1.87-7.21), proteins (OR=2.46 95% CI 1.27-4.75), fruits (OR=3.48 95% CI 1.77-6.84), vegetables (OR=2.72 95% CI 1.40-5.25) and milk (OR=2.09 95% CI 1.08-4.01) during pregnancy was significantly associated with utilization of antenatal care. Knowledge that green leafy vegetables (OR=2.72 95% CI 1.39-5.34) and intake of meat (OR=4.23 95% CI 2.15-8.34) prevents anaemia was significantly associated with utilization of antenatal care.

Women who availed antenatal care were more likely to use iron supplementation (OR=3.89 95% CI 1.97-7.66) and vitamin supplementation (OR=3.13 95% CI 1.61-6.11) during pregnancy.

Discussion

The consequences of failing to provide good mater-

nal and perinatal care is visualized from the disturbing statistics of maternal and neonatal morbidity and mortality for developing countries. Of all the health statistics monitored by the World Health Organization (W.H.O.), maternal mortality is the one that shows the largest discrepancy between developed and developing countries. Almost 90% of maternal deaths occur in developing countries. Over 50 million more women suffer every year from acute and chronic maternal morbidities. Every year more than 500,000 women die from complications of pregnancy and childbirth, most occurring in Asia.¹⁰ In addition, each year, 8 million neonatal deaths and stillbirths occur largely as a result of the same factors that cause the death and disability of their mothers.¹⁰ Most of these maternal and perinatal deaths and morbidities are preventable.

Tetanus coverage in this study population was

Tetanus coverage in this study population was 85.5%. The coverage was significantly higher in antenatal facilities utilizing versus non utilizing women ($p < 0.001$). Tetanus toxoid coverage among pregnant women in Pakistan is around 30%.¹¹ Prevalence of pallor in this study population was 62% and it was significantly higher in antenatal care facilities non-utilizing women ($p = 0.02$). Iron, folate and vitamin supplements are routinely given to women attending antenatal care facilities along with advice for appropriate dietary practices to reduce anaemia.

Prevalence of anaemia ($Hb < 11 \text{ gm/dl}$) in one of the recent studies¹² on pregnant women in Pakistan was found to be 96%. The same study found that 64% of the women had never used any haematinics. The prevalence of anemia was higher in rural areas than in urban areas, and more in women of child-bearing age than older women.¹³ The importance of antenatal counseling is highlighted by these findings.

Statistically significant difference was found among women who received antenatal care as compared to those who did not in recognizing fever, persistent vomiting and dizziness and fainting as danger signs in pregnancy. Recognition of the danger signs in pregnancy and subsequently getting medical help can drastically effect maternal and newborn morbidity and mortality. In one of the studies carried out in rural Hyderabad, Pakistan, only 40% of the women could identify the danger signs of obstetric complications.¹⁴ Improving antenatal care services and increasing overall maternal health awareness in the community is needed.

Antenatal care utilization was significantly associated with the level of awareness regarding quantity of food utilization during pregnancy. Women who received antenatal care knew the importance of adequate intake of proteins, vegetables, fruits and milk during pregnancy. They also knew that green leafy vegetables and organ meat were beneficial in preventing anaemia. This is in accordance with another study in urban squatter settlement of Karachi.¹⁵

Maternal mortality is undoubtedly an important public health problem in developing countries. It is possible to identify the precursors, early signs or risk factors for atleast some of the major pathogenic causes of maternal deaths such as anaemia, infections and rising blood pressure.¹⁶ This could be achieved through proper antenatal screening program. Recall bias, as in this study, could be reduced by

inclusion of women who are currently pregnant.

This research found an association between utilization of antenatal care and awareness about the danger signals in pregnancy. This could in turn lead to decrease in maternal morbidity and mortality. Pregnant women should be encouraged to seek antenatal care as early as possible.

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References

1. Boes EGM. Maternal mortality in southern Africa, 1980-1982. Part II. Causes of maternal deaths. *South Afr Med J* 1987;71:160-1.
2. Boes EGM. Maternal mortality in Southern Africa, 1980-1982. Part I. Pregnancy can be lethal. *South Afr Med J* 1987;71:158-60.
3. Melrose EB. Maternal deaths at King Edward VIII Hospital, Durban: a review of 258 consecutive cases. *South Afr Med J* 1984;65:161-5.
4. Kwast BE, Bekele M, Yoseph S, Gossa A, Mehari L, Frost O. Confidential enquiries into maternal deaths in Addis Ababa, Ethiopia 1981-1983. *J Obstet Gynaecol East Central Afr* 1989;8:75-82.
5. Walker GJA, Ashley DEC, McCaw A, Bernard GW. Maternal mortality in Jamaica: a confidential inquiry into all maternal deaths in Jamaica 1981-1983. Document FHE/PMM/85.9.10. Geneva: World Health Organization, 1985.
6. Walker GJA, Ashley DEC, McCaw A, Bernard GW. Maternal mortality in Jamaica. *Lancet* 1986;1:486-8.
7. Bhatia JC. Maternal mortality in Anantapur District, India: preliminary findings of a study. Interregional meeting on prevention of maternal mortality, Geneva 11-17 November 1985. Document FHE/PMM/85.9.16. Geneva: World Health Organization, 1985.
8. Bhatia JC. Light on maternal mortality in India. *World Health Forum* 1990; 11: 188-91.
9. WHO, The safe motherhood initiative, a decade after Nairobi, achievements in the WHO Eastern Mediterranean Region, 1998.
10. Carroli G, Rooney C, Villar J. How effective is antenatal care in preventing maternal mortality and serious morbidity? An overview of the evidence. *Paediatric and Perinatal Epidemiology* 2001;15 (supplement 1):1-42.
11. Federal Bureau of Statistics. "Pakistan Integrated Household Survey-Round 2. 1996-97." Federal Bureau of Statistics. Islamabad: 1998.
12. Awan M, Akbar M, Khan M. A study of anemia in pregnant women of railway colony, Multan. *Pak J Med Res* 2004;43:11-14.
13. Pakistan Medical Research Council, National Health Survey of Pakistan, Health profile of the people of Pakistan. Islamabad: PMRC 1998, p 90.
15. Safdar S, Inam SN, Omair A, Ahmed ST. Maternal health care in a rural area of Pakistan. *J Pak Med Assoc* 2002;52:308-11.
16. Nisar N, White F. 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;53:47-53.
17. World Health Organization. Antenatal care and maternal health: how effective is it? A review of evidence, 1992, p 11.