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# A COMPARATIVE STUDY TO SEE THE EFFECT OF ANTENATAL CARE ON OUTCOME OF PREGNANCY IN DIFFERENT POPULATION OF SELECTED AREASOF NIZAMPUR, SONIPAT, HARYANA

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## ABSTRACT

**The present pilot study was carried out in 45 pregnant women who resided at different locations in relation to well established maternity hospital. These women were comparatively studied in three groups consist of, fifteen women in each group. In Group-1, women resided in Delhi close to a hospital. In Group-2, women were taken up from rural area in Haryana. The Group-3 enrolled the women from remote areas.**

**KEY WORDS:** Pilot study, Antenatal care,Sonipat, Haryana

A written permission was obtained municipal councilor of Sonipat, Haryana and Medical superintendent Palika Maternity Hospital Lodhi colony New Delhi. As the gestation period in human species is nine months, so this study required more than a year to collect sufficient and relevant data. Therefore the pilot study was conducted over a year i.e. from March 2016-August2017 at selected community of the village Nizampur. Fifteen pregnant women were selected by probability random sampling technique. It was quite possible to collect an ample amount of data in the first two groups, but collecting the relevant data in third group i.e. in remote areas was a difficult task. The most of them were nomadic and migrating to different locations. Hence a thorough retrospective inquiry was conducted from the recently delivered mothers and their family members.The parameters which were observed in pregnant women in every visit were compared with the findings of earlier visits to assess proper growth of fetus and the general health of the pregnant mother. Further again these collected data were compared statistically between the three groups to evaluate the outcome of pregnancy for final results.(AbdelAziem 2010, FerencBanhidy& R. Brian Lowry et al 2005 and Higgins JR 2001)

During the pilot study, the assessment of demographic data, the knowledge and practice of antenatal care received by pregnant women and the outcome of pregnancy was observed in the specified areas.Pre-test was done by providing structured knowledge questionnaire for 30 minutes. After pre-test the investigator administered structured teaching program on antenatal care to be provided. The post test was conducted after delivery using structured knowledge questionnaire. The same procedure was followed in all samples.

## MATERIALS AND METHODS

This pilot study has been carried out in 45 pregnant women, though the final study will be carried out in 150 pregnant women within age group of 20-30 years and will be studied in three groups.

**Group-1:** Consists of 50 pregnant women from urban area who received antenatal care from a obstetrician in well established hospital.

**Group-2:** Consists of 50 pregnant women from rural area and received antenatal care from a medical officer and ASHA worker.

**Group-3:** Consists of 50 pregnant women from rural and remote areas and could not receive any kind of antenatal care, a retrospective assessment was done.

Following parameters were observed and analyzed, during the antenatal visits of pregnant women in table 1.

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**Table 1:Different Parameters observed and analyzed, during the antenatal visits of pregnant women**

| Parameters observed | 1st visit | 2nd visit | 3rd visit | 4th visit | 5th visit |
|---|---|---|---|---|---|
| **Blood pressure**<br>**Maternal Weight gain**<br>**Assessment of uterine height and girth**<br>**Pallor ( Anemia)**<br>**Immunization status**<br>**Any mal presentation**<br>**Adverse events during observation**<br>**Weight & status of baby at birth** | | | | | |

Primi-gravida and second-gravida mothers were included in this study. Pregnant women after 16-20 weeks of gestation were enrolled in study. Required information and relevant data were collected from the pregnant women, those who attended and availed antenatal care at Palika Maternity Hospital Lodhi colony, a well established government hospital in national capital of Delhi. The data for second group were collected from the pregnant women in the selected area i.e. village Nizampur, Sonipat Haryana a rural area. Thesepregnant women who were enrolled in the study after 16-20 weeks of gestation were informed about their clinical checkups. A writtenquestionnaire was provided to them to assess and obtain the relevant necessary information is given below.

1) Ask the age of antenatal mother in years.
   i) 15-19
   ii) 20-24
   iii) 25-30
2) Education
   i) Illiterate
   ii) Literate- secondary education/Postgraduate.
3) Household income monthly
   i) Less than 4500
   ii) More than 4500
4) Place of the antenatal check up
   i) Outreach clinic
   ii) Primary health centre
   iii) Hospital
   iv) Paramedical clinic
5) Tetanus vaccination
   i) Never vaccinated
   ii) First time vaccinated
   iii) Second time vaccinated
6) Number of antenatal visits to ANC clinic.
   i) Never visited
   ii) Less than four visits
   iii) More than four visits
7) Iron and folic acid tablet intake status
   i) Yes
   ii) No
8) Care provider
   I) Dai
   II) Midwife
   III) LHV
   IV) Doctor
9) Place of delivery or where do you plan for delivery
   i) Private
   ii) Government
   iii) Home
10) First visit for antenatal care
   i) First trimester
   ii) Second trimester
   iii) Third trimester
   iv) Time not known
11) Do you know how to care for self during pregnancy
   i) Don't know
   ii) Less than four times

iii) More than four times

12) Do you know how frequently you should visit to ANC clinic
    i) Correct for visit
    ii) Don't know
    iii) Wrong answer
13) Knowledge of danger sign during pregnancy
    i) Severe headache
    ii) Ante partum hemorrhage
    iii) Eclampcia
14) Abdomen pain
    i) Edema
    ii) Others
    iii) Vomiting do you have hyper-emesis
15) Sign and symptom of pregnancy
    i) Stopping of menses
    ii) Nausea ,vomiting
    iii) Abdominal change
16) Antenatal care utilization
    i) Yes
    ii) No
17) Frequency of antenatal care
    i) Once
    ii) Twice
    iii) Trice
    iv) Four times
    v) Seven times
18) Antenatal care provider
    i) Government health care provider
    ii) Private health care provider
    iii) Lady health care provider
19) Maternal education
    i) Cannot read and write
    ii) Can read and write
    iii) Primary secondary
    iv) Home based vocational training
20) What is your plan or Mode of delivery
    i) Spontaneous vaginal delivery
    ii) Forceps vaginal delivery
    iii) Caesarian section

**Table 2: Comparison Between rural and urbanpatientfor different Parameters**

| Sr. No. | Variables | Group-1 Mean ± | Group-2 Mean ± | Std. Deviation Group-1 | Std. Deviation Group-2 |
|---|---|---|---|---|---|
| 1 | Maternal weight gain in Kg | 11.7467 | 8.5833 | .84842 | .18732 |
| 2 | Uterine height in Weeks | 36.2308 | 36.000 | .43853 | .0000 |
| 3 | Hemoglobin Gm% | 12.685 | 10.00 | .4785 | .0000 |
| 4 | Blood pressure Systolic | 124.53 | 126.40 | 5.097 | 7.827 |
| 5 | Blood pressure diastolic | 82.67 | 84.67 | 4.117 | 5.839 |
| 6 | Blood Sugar (Fasting) | 74.93 | 69.23 | 3.936 | 3.345 |
| 7 | Blood Sugar( pp) | 113.07 | 107.85 | 6.112 | 5.669 |
| 8 | Weight of new born in Kg | 2.74173 | 2.30533 | .318986 | .177678 |

P value < 0.05 is significant *
P value< 0.01 is highly significant **

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## RESULTS

The age and sex were comparable in all the three groups. The other variable parameters like weight gain, uterine height, blood pressure,Hb. & blood sugar level, weight of baby at birth were compared among the three groups after applying the ANOVA formula.

In group-1the average weight gain by pregnant mothers at 36 weeks of gestation was 11.74 kg,while in group-2 the average gain was 8.58 kg. The pvalue < 0.05 which shows a significant weight gain in group-1.The weight gain in group-3 could not be assessed as most of information were received randomly and a retrospective assessment of the recently delivered mothers. Similarly the average uterine height in group-1 at 36 weeks of gestation was well corresponded with the accepted height i.e. 36.2308 and 36.000in group-2again p value is <0.05 i.e. significant height in group-1. The women in group-3 were not attending the ANC clinics so there is no data available in this relation. The average hemoglobin percentage in group-1 was more than 12, while in group-2 it remained below 12 gm%. Again no data could be gathered in group-3 for the analysis. The blood pressure measured during ANC visits revealed that in group-1 on an average it remained below 124/78 mm while in group-2, blood pressure remained on higher side. The birth weight and APGAR score of new born on an average in group-1remained above 2.7417kg, while in group-2 it was 2.30533 relatively on lower side. The p value is < 0.05 this shows that significant weight gain in group-1. The other associated problems with pregnancy like abortion, still birth, low birth weight, perineal tear, anemia were significantly noted in group-3, lesser in group-2 and minimum in group-1. In regard of regularity of antenatal visits, women in group-1 were regular and attended all the visits prescribed by obstetrician. The women in group-2 have missed the antenatal visits and the second dose of tetanus immunization.

## DISCUSSION

The present research was carried out to study the effect antenatal care received by the pregnant women on outcome of pregnancy at various level of human settlement i.e. urban, rural and remote. The various adverse factors like low literacy, poor socio-economic status, and distant location from the hospital were evaluated in relation to outcome of pregnancy. The quality of antenatal care provided to a pregnant woman at different locations was also studied. As reported by( Rajender Raj Wagle et al.,2004) that physical distance from the health centers has deleterious effect on outcome of safe pregnancy. The present study conducted by us also support the above study with similar results. A study conducted by Myer L, Harrison A (2003) that the incidences of complication are high due to lack of timely care as women report late for antenatal caresimilar results were noted in our study in rural area group-2. Comparatively low birth weight of newborn was recorded in group-2. The study carried by ( Higgins JR 2001) showed the deleterious effects of pregnancy induced hypertension on new born the similar results were found in pregnant women of group-2. The higher values of blood pressure were noted in the women of group-2 and were prone to pregnancy induced hypertension (PIH). The pregnant women from rural area i.e. in group-2 often missed their antenatal visits and hence the immunizationagainst tetanus andsupplementation of iron and folic acid which otherwise has proved beneficial. The study by(Erci B, 2003)that low level of education of pregnant mothers is the barrier for antenatal care, the same observation was also noted in our study especially in rural region. A study by ( Abdel Aziem 2010)revealed inadequacy of antenatal care utilization in Sudan, again similar results were noted in our study also, in the pregnant women from remote and rural area under study as they could not avail full advantage of this facility.Hollowell J, Oakley L 2011 carried out a study to see the effectiveness of antenatal care on reduction of infant mortality and found positive results, the similar results were noted ingroup-1of our study as the women were well educated. The study by Blencowe H &Roper M et al 2010 regarding tetanus toxoid immunization in

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pregnant women in reduction of neonatal tetanus, the similar results were observed in our study in group-1 though in group-2 & 3a few neonates suffered convulsions.Regarding utilization of antenatal care services a study by Rajiv Gupta &TajaliNazir et al 2015, it was revealed in their study that 90% of women were registered for ANC checkups but contrary to it, our studyshowed that majority of women in group-2 & 3 were not aware of this health facility. A study on urban and rural disparity on utilization and outcome of pregnancy by Toan K Tran 2011 has found a large disparity in the utilization this facility, in this context our study also revealed the similar results. A study by Abderahuim&Elgoni 2010 on anemia and low birth weight of newborn in Sudan and found a positive correlation, similarly our study have also shown that anemic mothers had delivered low birth weight baby. FerencBanhidy& R. Brian Lowry et al 2005, studied the effect of various drugs on congenital malformation in new born however till now no case of congenital malformation was reported in our study.

## CONCLUSION

This pilot study is carried in 45 pregnant women at various levels of human settlements showed the disparity in outcome of pregnancy due tonon availability of proper antenatal care facilities. The low socio-economic condition and literacy have negatively contributed in outcome of pregnancy. The complication rates during antenatal period and at the time of child birth were high in group-2 and 3. However the women in group-1 had safer antenatal period and child birth. Hence for the safe outcome of pregnancy institution of early andproper antenatal care is recommended.The study is feasible and economical.The study subjects were easily available, but the process was time consuming and laborious.

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