International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Doshi N et al. Int J Reprod Contracept Obstet Gynecol. 2020 May;9(5):1981-1985
www.ijrcog.org

pISSN 2320-1770 | eISSN 2320-1789

DOI: http://dx.doi.org/10.18203/2320-1770.ijrcog20201792

Original Research Article

# Swine flu awareness in pregnancy

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**Received:** 18 February 2020
**Revised:** 01 April 2020
**Accepted:** 09 April 2020

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## ABSTRACT

**Background:** Swine influenza outbreaks are common in pigs year-round and infection in humans is a result of close contact with infected animals. Understanding the perception of the public and their potential resources would help public health agencies in developing educational programs to increase the awareness of the public. The objective of this study was to assess the knowledge, attitude and practices on different aspects of swine flu.
**Methods:** A cross-sectional study of 100 pregnant women was conducted at Varun Arjun Medical College, Banthara, Shahjahanpur, Uttar Pradesh, India to test their knowledge, attitudes, and use of precautionary measures against influenza infection.
**Results:** In this study, 98 (98%) of pregnant women were aware of swine flu infection, 85 (85%) of pregnant women knew that swine flu is due to viral infection while 65 (65%) of pregnant women were aware that swine flu infection spreads through air while sneezing and coughing. In this study, 95 (96%) of pregnant women knew fever as symptom of swine flu, 83 (83%) of pregnant women knew cough and cold as symptoms while 64 (64%) of pregnant women knew headache and body ache as symptoms. 94 (94%) of pregnant women were aware that vaccination against swine flu can prevent swine flu infection. 80 (80%) of pregnant women knew that covering mouth and nose while coughing and sneezing can prevent spread of swine flu infection while 52 (52%) of pregnant women knew that frequent hand washing helps in preventing spread of swine flu infection. 76 (76%) of pregnant women received vaccination against swine flu while 24 (24%) of pregnant women did not receive vaccination against swine flu.
**Conclusions:** Learning more about the knowledge, attitudes, and behaviors of the public during swine flu and other infectious disease outbreak can be crucial to improve efforts by public health officials and clinicians.

**Keywords:** Infection, Knowledge, Pregnancy, Prevention, Vaccination

## INTRODUCTION

A novel influenza A (H1N1) or Swine flu emerged from Mexico caused the first pandemic of the century where H and N stands for two surface proteins of the virus.[1]

Changes in immune function during pregnancy alter a pregnant woman's susceptibility to certain infectious diseases. Influenza infections cause more severe illness and higher mortality rates for pregnant women. Also, other physiologic changes in pregnancy like increased heart rate, stroke volume, and oxygen consumption along with decreased lung capacity may contribute to the increased risk for illness during pregnancy. Due to the high risk for influenza-related complications, all women during the influenza season should be vaccinated.[2]

Physicians may hesitate to give vaccination or aggressive treatment to pregnant women due to concerns about effects on the fetus. As per 1997 recommendation, all

symptomatic treatment. Antiviral medications should be given only in suspicious pandemic influenza cases. If respiratory pathology gets worse the patient should be hospitalized immediately in a unit with the proper equipment. Every citizen must receive the A H1N1 vaccine. Pregnant women and breastfeeding women should be given priority. Pregnant women should receive the vaccine in any trimester but especially in the last trimester to prevent maternal and fetal complications.[10]

### *Aims and objectives*

- To know whether the pregnant women had enough knowledge about swine flu (H1N1).
- To assess their knowledge about possible preventive measures to be taken including vaccination against swine flu.

## METHODS

A cross-sectional study assessing the knowledge, attitudes and practices regarding Swine flu was performed at Varun Arjun Medical College, Banthara, Shahjahanpur, Uttar Pradesh, India. among pregnant women. Pregnant women aged 20-45 years during the period November to December 2017, formed the sample population. Using convenience sampling, 100 study pregnant women were approached and verbal consent for a face-to-face interview was sought.

### *Inclusion criteria*

- Pregnant women aged 20-45 years.

### *Exclusion criteria*

- Pregnant women <20 and >45 years
- Pregnant women Residents who failed to respond to all questions or who left before completing the interview.

Face-to-face interview was based on a pretested questionnaire

**Table 1: Questionnaire.**

| Questionnaire | |
|---|---|
| 1 | Name |
| 2 | Age |
| 3 | Awareness of swine flu infection |
| 4 | Cause of swine flu |
| 5 | Symptoms of swine flu |
| 6 | Practices to prevent swine flu |
| 7 | Whether received vaccination |

### *It included three essential questions*

1. Mode of spread of swine flu.
2. Common symptoms.
3. Preventive measures against the swine flu.

Questionnaire included detail information regarding patient, their attitude and practices regarding swine flu.

### *Statistical analysis*

Data was collected in Microsoft excel sheet and analysed. Statistical analysis was done in percentages.

## RESULTS

In this study, 52 (52%) of pregnant women were from 26-30 years, 23 (23%) pregnant women were from 31-35 years, 12 (12%) of pregnant women were from 20-25 years of age, 10 (10%) pregnant women were from 36-40 years while 3 (3%) of pregnant women were from 41-45 years of age (Table 2).

**Table 2: Age distribution.**

| Age distribution | No. of pregnant women | Percentage |
|---|---|---|
| 20-25 years | 12 | 12% |
| 26-30 years | 52 | 52% |
| 31-35 years | 23 | 23% |
| 36-40 years | 10 | 10% |
| 41-45 years | 3 | 3% |

**Table 3: Awareness of swine flu and its transmission.**

| Awareness of swine flu and its transmission | No. of pregnant women | Percentage |
|---|---|---|
| Awareness of swine flu | 98 | 98% |
| Viral infection is the cause | 85 | 85% |
| Spread by coughing and sneezing through air | 65 | 65% |

In this study, 98 (98%) of pregnant women were aware of swine flu infection, 85 (85%) of pregnant women knew that swine flu is due to viral infection while 65 (65%) of pregnant women were aware that swine flu infection spreads through air while sneezing and coughing (Table 3).

**Table 4: Awareness of symptoms.**

| Awareness of symptoms | No. of pregnant women respondents | Percentage |
|---|---|---|
| Fever | 96 | 96% |
| Cough and cold | 83 | 83% |
| Headache and body ache | 64 | 64% |

In this study, 95 (96%) of pregnant women knew fever as symptom of swine flu, 83 (83%) of pregnant women knew cough and cold as symptoms while 64 (64%) of

*Funding: No funding sources*
*Conflict of interest: None declared*
*Ethical approval: The study was approved by the Institutional Ethics Committee*

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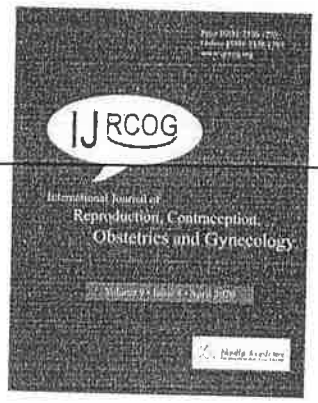
**Cite this article as:** Doshi N, Upadhye AJ, Upadhye JJ. Swine flu awareness in pregnancy. Int J Reprod Contracept Obstet Gynecol 2020;9:1981-5.

# International Journal of Reproduction, Contraception, Obstetrics and Gynecology




**English title:**
International Journal of Reproduction, Contraception, Obstetrics and Gynecology
**ISSN:**
2320-1770 (print), 2320-1789 (online)
**GICID:**
*n/d*
**DOI:**
10.18203
**Website:**
https://www.ijrcog.org (https://www.ijrcog.org)
**Publisher:**
Medip Academy
**Country:**
IN
**Language of publication:**
EN

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Publisher () Metrics ()

ORIGINAL RESEARCH PAPER
Volume - 9 | Issue - 8 | August - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

# UNSAFE ABORTIONS AND THEIR COMPLICATIONS: RECENT EXPERIENCES IN A RURAL TERTIARY CARE FACILITY

Obstetrics and Gnaecology / Pathology

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## ABSTRACT

**Introduction:** The number of abortions when classified into facility based , medical abortions outside facilities and other type of abortions constituted a medium of 3375252, 14837497 and 807251 cases respectively, when adjusted for various parameters for India. The present study was conducted to include abortions outside medical facilities including methods of abortion, clinical complaints, complications and their management.

**Material and methods:** The hospital records for patients who underwent abortions were accessed for a four year period from 2016-2020. The number of patients undergoing supervised abortions and patients presenting with incomplete abortions or related complications were recorded. The presenting complaints for spontaneous abortions and abortions done outside medical health facility along with the therapeutic interventions for such unsafe abortions including complications were assessed.

**Results:** The total numbers of abortions were 4316, out of which hospital supervised termination of pregnancies constituted 59.8% where as abortions or related complications outside a medical facility were 40.2 %.
The modes of abortion, presenting features and complications of abortions performed outside medical facilities (total number=1824) and the treatment were recorded. Out of these patients with spontaneous abortions were 36.8% whereas those presenting with complications constituted 63.2%. The commonest method for such abortions was use of abortions pills but other abortifacients and crude instrumentation were also recorded. The commonest clinical feature was discharge per vagina, with retained products of conception causing most complications. The main therapeutic procedure done was dilatation and curettage.

**Conclusion:** The rural population needs a robust health facility for abortion related care. The sale of abortion pills needs to be tightly regulated . Similarly, crude instrumentation which is a significant cause of morbidity, in unsupervised abortions can be eliminated by awareness and strengthening the health care system making it more approachable for women in rural population.

## KEYWORDS

Unsafe abortions, Methods, Complications, Treatment

## INTRODUCTION

With recent development in medical sciences, abortion as a cause of maternal mortality is significantly reduced in resource rich developed countries. But in India which has primarily rural population lack of awareness and education along with social taboos and limited health facilities, unsupervised abortions significantly contribute to maternal mortality and morbidity. An unsafe abortion is defined as "a procedure for terminating an unintended pregnancy carried out either by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards, or both."1Previous study on unsafe abortion and abortion-related mortality in India, estimated overall rate of abortion to be 4.8%, ranging from 1.6% to 6.5% among the nine states. Overall, 67.1% of abortions were classified to be unsafe, varying widely across the states with the highest being 78.3% and the lowest being 45.1%.2 Another_ aspect of such unsafe abortion outside of health facilities was highlighted by method of abortion as increased use of medications 73% and 5% abortions were done using other methods.3. Unsafe abortions employ various methods include drinking toxic fluids , inflicting direct injury to the vagina or elsewhere—for example, inserting herbal preparations into the vagina or cervix; placing a foreign body such as a twig, coat hanger, or chicken bone into the uterus; or placing of inappropriate medication. Unskilled providers also improperly perform dilation and curettage in unhygienic settings, causing uterine perforations and infections; external injury methods such as jumping from the top of stairs or blunt trauma to the abdomen are also used.1,4

With these considerations, we studied the profile of abortions in our institute which was the first Medical College in the Shajahanpur district, Uttar Pradesh India having population of 3.01 million with urban / metropolitan population of only 329,736 and average literacy rate of 67.25%. 5

## MATERIALAND METHOD

The hospital records for patients who underwent abortions were accessed for a four year period from 2016-2020. The number of patients undergoing supervised abortions (Medical Termination of pregnancy) and patients who underwent unsafe abortions presenting with incomplete abortions or related complications were recorded.

Further the presenting complaints for spontaneous abortions and abortions done by untrained people outside medical health facility were recorded. The reasons for such unsafe abortions and also the means/modes were recorded, by a detailed history. The products of conception were subjected to histopathological examination for confirmation and to rule out any other associated pathology.

Therapeutic interventions for such outside medical facility abortions were recorded for addressing complications and definitive care of the patient.

## OBSERVATIONS

The total number of abortions were 4416, out of which hospital supervised termination of pregnancies constituted 58.7 %(2592 cases). Out of these, 1536 (59.2%) were medical abortions using ***Mifepristone*** and misoprostol under supervision while surgical termination of pregnancy using dilatation and curettage was done in 1056 cases (40.8%). All such cases underwent ultrasonographical examination, before abortion either by medicines or by dilatation and curettage.The only complication in such cases was failure of abortion or incomplete abortion in ***Mifepristone*** and misoprostol induced cases (3.4%/54 cases) and subsequently these patients underwent dilatation and curettage.

The total number of unsafe abortions or as patient presenting with spontaneous abortions, incomplete abortions or related complications outside a medical facility were 1824(41.3 %).

Out of these, patients presenting with spontaneous abortions were 672 (36.8%) whereas cases presenting with clinical features of incomplete abortions due to interventions outside health facilities were 1152(63.2%).

PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr

The commonest method for such abortions was use of contraceptive and abortion pills (760cases,66%) but use of other abortifacients (physical, chemical and herbal) and invasive methods using crude instrumentation(144 cases,12.5%) for dilatation and curettage with or without abortifacients were also recorded. **(Table 1).**

**Table 1**

| Serial number | METHODS FOR UNSAFE ABORTION | NUMBER OF CASES(1152)/ PERCENTAGE (100%) |
|---|---|---|
| 1 | Abortifacient Medications | 66% (760) |
| 2 | Unsafe dilatation and curettage | 12.5% (144) |
| 3 | Ayurvedic tinctures with insertion of twigs into cervix | 8.5% (98) |
| 4 | Herbal mixtures from local plants | 2.5% (29) |
| 5 | Insertion of metallic objects | 4% (46) |
| 6 | Insertion of foreign bodies like neem twigs/broom sticks | 3% (35) |
| 7 | Insertion of herbal medication into cervix/vagina | 2% (23) |
| 8 | Ingestion of toxic liquids like turpentine oil, bleach solun | 1.5% (17) |

The commonest clinical feature was discharge per vagina but two other findings which were associated with significantly greater morbidity were incomplete evacuation with retained products of conception and injury to cervix in 87 and 20 cases, respectively. **(Table 2)**

**Table 2**

| S. No. | Symptoms | Percentage% (Number) 100% / 1824 | Signs | Percentage % (Number) 100% / 1824 |
|---|---|---|---|---|
| 1 | Heavy Bleeding Per Vaginum | 58.54% (1068) | Blooding per Vaginum | 55% (1003) |
| 2 | Severe abdominal pain and cramps | 16.18% (295) | Abdominal tenderness | 15-07% (275) |
| 3 | Weakness | 12.36% (225) | Pallor | 14.02% (256) |
| 4 | Fever / Chills | 8.19% (149) | Foul smelling Discharge Per Vaginum | 8.82% (151) |
| 5 | Incomplete evacuation as per Ultrasonography | 4.73% (87) | Fever | 5-97% (20) |
| 6. | | | Injury to Cervix | 1.12% (20) |

Retained Products of Conception were the most common complication 73.68% with spontaneous incomplete abortions as well as unsafe incomplete abortions followed by sepsis15.13%. The tissue removed was histopathologically confirmed and additional findings like necrosis or inflammation were recorded. Patients presenting or developing shock during the course of treatment were 165 and out of these 18 patients died during the course of treatment. **(Table3)**

**Table3**

| S.no. | Complications | Percentage/ (Number) 100% (1824) |
|---|---|---|
| 1 | Retained Products of Conception | 73.68% (1344) |
| 2 | Sepsis | 15.13% (276) |
| 3 | Shock | 9.03% (165) |
| 4 | Genital tract injuries. (1) Cervical lacerations<br>(2) Uterine Perforations | 1.18% (21)<br>0.49% (09) |
| 5 | Undiagnosed ectopic pregnancy | 0.49% (09) |

Dilatation and curettage was the main stay of management along with medicines, blood transfusion and supportive treatment. However cases of uterine perforations and ectopic pregnancy were managed by laprotomy. Hysterectomy was performed in three cases of uterine perforations which were multiple and patient had completed family. **(Table 4)**

**Table 4**

| S.no. | Treatment / Management | Percentage/ (Number) 100% 1824) |
|---|---|---|
| 1 | Dilatation and curettage and medicines | 78.75% (1436) |
| 2 | Dilatation and curettage and Blood Transfusion | 16-11% (194) |
| 3 | Dilatation and curettage with Repair of cervical lacerations | 4.16% (76) |
| 4 | Laprotomy for Uterine Perforation | 0.35% (06) |
| 5 | Laprotomy for ectopic pregnancy | 0.49% (09) |
| 6 | Hysterectomy for Uterine Perforation | 0.14% (03) |

## DISCUSSION

In this study we first tried to estimate the problem of abortion in a district where the majority of population was rural with limited access to maternal health care facilities. We found that medically supervised abortions in authorized health care facility was 58.7%, which was higher than 40% as reported by World Health Organisation(6) and 22.5% as reported by Singh etal **(3).** The reason for this can be attributed to greater social networking by public relation officers employed by our private institution for awareness of better health care facilities to the rural population and at the same time implementation and benefits of low treatment costs, available at our institution under various government schemes.

The combination of mifepristone and misoprostol has been shown very efficacious in terminating early pregnancy(≤49 days since the last menstrual period) 7, and the same was used for terminating early pregnancies in our hospital. The success rate of this combination of drugs has been documented as ranging from 96.8% to 98.3% 8, and the findings were comparable in our study with a success rate of 96.6%.

In our study, patients presenting with spontaneous abortions were 672 (36.8%) out of total abortions, outside medical health care facilities and the main reasons for presenting to the hospital were delay in periods or discharge per vagina. On further evaluation, the cause was found to be retained products of conception or incomplete abortion. The finding was lower than previously reported as ranging from, 43% - 50% **9.** The reason for this can be attributed to early age of marriage in rural population thereby negating the strongest risk factor for miscarriage, that is advanced maternal age **10,** however the possibility of underreporting in our study can also not be overlooked as many women undergoing spontaneous abortion may not have reported to the hospital in absence of any complications due to reasons such as denial, forgetfulness, and/or miscarriage mistaken for delayed menstruation, as previously reported.**9**

Singh etal. estimated the incidence of unsafe abortion in India, on basis of outside health care facility to be 78% where 73% abortions were done using medicines and 5% using other methods. **3** The Annual Health Survey for Madhya Pradesh, India reported 45% of abortions occurred at health facilities, indicating a potentially large utilization 55% of unsafe abortion services. **11.** Our study estimated the incidence of unsafe abortions to be 41.3 %, which was significantly lower than previous studies. The reason for this is higher level of functionality and better outreach in the catered population, ours being a private sector institution and same has been by documented by Chaturvedi etal. **11.**

Medical abortion or abortion by orally administered regimens of Mifepristone and Misoprostol has recently been accepted worldwide as an effective and safe option for early abortion. It is a safe procedure, with mortality rates comparable with spontaneous abortion.**12** An important finding in study by Singh etal. was that most abortions are medication abortions, and most medication abortions are obtained outside health facilities using the combined medication abortion protocol of mifepristone plus misoprostol but little is known about what kind of information women are getting when they obtain this method from chemists and informal vendors, and whether they are taking it correctly. **3** We also found that majority of abortions outside health facilities and patients presenting with abortion related complications had used the combination of Mifepristone and Misoprostol without supervision and proper dosage **(66%).** The procurement of these drugs and their method of use could not be documented as women were not forthcoming and gave only vague replies like from unidentifiable female health worker, local chemist shops or from some relatives. An important complication of this unsupervised mode of usage of these drugs was their use in undiagnosed ectopic pregnancy, which in our study were 9 cases and

.aprotomy had to be performed, as a life saving measure in all these patients. Debnath J etal found that history of intake of mifepristone and misoprostol was present in 43.75 % of cases of ectopic pregnancy related abortions cases and concluded that ectopic pregnancy may remain under-diagnosed with potentially serious consequences in patients who have taken these drugs without prior confirmation of intrauterine gestation. 13

Unskilled providers also improperly perform dilation and curettage in unhygienic settings, causing uterine perforations and infections 14. Similarly, other methods of abortion used by unskilled health workers like oral, local or intravaginal use of herbal, medical or corrosive substances / liquids as abortifacients has also been documented 1,4. Unsafe abortions using dilatation and curettage apart from being incomplete abortions can lead to serious complications like hemorrhage, septicemia, septic shock, and visceral injuries including uterine perforations which at the time of curettage during first trimester abortion go unrecognized and untreated.[15] We found that sepsis, shock and genital tract injuries constituted 26.94 percent of such unsupervised abortions and surgical management was mainstay of treatment in 4.65% of cases and included repair of lacerations, laprotomy and hysterectomy.

The complications of unsafe abortions include hemorrhage, sepsis, peritonitis, and trauma to the cervix, vagina, uterus, and abdominal organs.16Similarly post abortion care is also not offered to women as untrained village level health care providers who perform these unsafe observations exacerbate the post abortion complications and in the process increase not only the cost but also associated morbidity17 Bleeding per Vaginum along with pallor constituted the most common clinical features in our study constituting nearly 70% of all women undergoing unsafe abortions. These are difficult for a rural woman to explain or discuss due to social customs and they reported to the hospital only as a last resort. Acute presentation of other complications like fever, tender abdomen, sepsis and shock were also a significant contributor to morbidity and again the patients reported to the hospital as last life saving measure.

## CONCLUSION

The present study shows that the rural population needs a robust health facility for abortion related care and at same time better management of complications. The institutional facilities whether public or private with proper motivation can help reduce this morbidity and can encourage rural women for approaching health care facility for abortion and related care. The sale of abortion pills (although government regulations exist but implementation needs to be strengthened) needs to be tightly regulated and again crude instrumentation which is a significant cause of morbidity, in such unsupervised abortions can be eliminated by education, awareness and strengthening the health care system making it more approachable for women in rural population.

## LIMITATIONS

The present study included only those patients who reported to this hospital, which was the first tertiary care center in the district but it cannot be extrapolated to reflect on the entire district population, where the burden may be higher.

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IJSR
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH
PRINT ISSN NO 2277 - 8179
IF OF IJSR: 5.711 (SJIF)
PEER REVIEW, INTERNATIONAL JOURNAL
JOURNAL DOI : 10.36106/IJSR





MEDICAL COUNCIL OF INDIA (MCI) VALID PUBLICATION AS PER FEBRUARY 2020 GAZETTE

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*International Journal of Medical Science and Innovative Research (IJMSIR)*
*IJMSIR: A Medical Publication Hub*
*Available Online at: www.ijmsir.com*
*Volume – 6, Issue – 4, July – 2021 , Page No. : 160 - 165*

# Practices of Antenatal care in Rural India

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**Citation this Article:** Dr. Nilesh Doshi, Dr. Aditi J. Upadhye, Dr. Jayshree J.Upadhye, "T Practices of Antenatal care in Rural India", IJMSIR- July -2021, Vol – 6, Issue - 4, P. No. 160 – 165.
**Type of Publication:** Original Research Article
**Conflicts of Interest:** Nil

**Abstract**

**Background:** Antenatal care is a key strategy to improve maternal and infant health. The present study was done with the objective of assessing standards of antenatal care in rural areas.

**Material & Methods:** A community based cross-sectional study was conducted in the practice study area of the Department of Community Medicine by Department of Obstetrics & Gynaecology, Varun Arjun Medical College, Shahjahanpur, U.P. from April to June 2019. Antenatal patients of more than 30 weeks of gestation were included in the study.

**Results:** Among 200 study subjects, majority of pregnant women were in 21-30 years age group.

In present study, out of 200 pregnant women, majority i.e. 112 (56%) women were primigravida, 72 (36%) women were pregnant for second time while 16 (8%) women were pregnant for third time.

34 (17%) women had their first antenatal visit at 6 weeks, 78 (39%) women had their first antenatal visit in second trimester while 88 (44%) women had their first antenatal visit in third trimester.

All 200 (100%) women had received immunization against tetanus, 44 (22%) had received Swine Flu vaccine while 176 (88%) women were taking both iron & Calcium supplements.

**Conclusion-** In present study, practice of T.T. immunization was universal. Practice of taking iron & calcium supplements was also good. Women were having at least four antenatal visits as per WHO but the percentage of women having antenatal visit at 6 weeks was very poor. Also, Swine Flu vaccine was very poor.

**Keywords:** Antenatal care, primigravida, antenatal visit, antenatal care, vaccination

## Introduction

In developing world including India, more than 30 million women are suffering each year from serious obstetric complications.[1]

The World Health Organization (WHO) reported that in 2015, around 830 women died every day from complications in pregnancy and childbirth. Out of these, only 5 lived in high-income countries & rest lived in low-income countries[2]

Although services are given freeof cost, there are number of factors which contribute to late initiation of antenatal care among pregnant women. These may vary between rural and urban areas.[3]

Prenatal care is a type of preventive healthcare. It is also known as **antenatal care.** Its goal is to provide regular check-ups. This allows doctors to treat and prevent potential health problems throughout the pregnancy and to promote healthy lifestyles which will benefit both mother and child.[4]

Traditional prenatal care generally consists of:[5]

- Monthly visitsfrom 1st week to 28th week
- Fortnightly visits from 28th week to 36th week of pregnancy
- Weekly visits after 36th week till delivery
- Assessment of parental needs and family dynamics

The WHO recommends that pregnant women should receive at least four antenatal visits to spot and treat problems and give immunization. Although antenatal care is important to improve the health of mother and baby, many women do not receive four visits.[6]

The care of women during pregnancy is called Antenatal care. It includes pregnant woman's visit to antenatal clinic, examination, investigations, immunization, supplements of iron, folic acid, calcium, and the required interventions. This is a comprehensive approach to medical care and psychological support to the family which begins at conception and ends with onset of labor. It envisages on-going assessment of risk, identifying and managing problems through education, counseling and medical interventions. The goal of Antenatal care is to have a healthy mother and healthy baby at the end of pregnancy.[7]

Generally an ultrasound is advised along a schedule similar to the follow up or if some abnormality is suspected at-:[8]

- 7 weeks — to confirm pregnancy, to rule out molar or ectopic, to determine due date
- 13–14 weeks — to evaluate the possibility of Down syndrome
- 18–20 weeks — to see the congenital abnormalities
- 34 weeks – to evaluate size, verify placental position

A study in Ethiopia showed that proper advice and information on timely booking from service providers and community level are very important for the effective utilization of the service.[9]

Many health problems among pregnant women are preventable, detectable or treatable. This is possible through visits with trained health workers before birth. This way, women can receive important services, like tetanus immunisations and screening and treatment for infections. It also gives information about warning signs during pregnancy.[10]

**Material & Methods**

A community based cross-sectional study was conducted in the field of practice area of the Department of Community Medicine by Department of Obstetrics & Gynaecology,,Varun Arjun Medical college, Shahjahanpur, U.P. from April to June 2019. Antenatal patients of more than 30 weeks of gestation were included in the study. A pre-designed questionnaire, which was pre tested was used to collect the information. The information was collected on demographics like age, education, occupation and no of children, study variables like ANC visits, immubisations, medications & investigations. Questions were framed on the knowledge regarding various aspects of Ante natal care and regarding practices related to antenatal care. Verbal consent was taken from the pregnant women after explaining the purpose of the study.

**Inclusion Criteria**

- Pregnant women of gestational age >30 weeks or more
- Pregnant women willing to participate in the study

**Exclusion Criteria**

- Pregnant women of gestational age <30 weeks
- Pregnant women not willing to participate in the study

Table : Questionnaire

| Sn. | Variables |
|---|---|
| 1 | Name |
| 2 | Age |
| 3 | Socioeconomic status |
| 4 | Gestational age |
| 5 | Gestational age at first visit |
| 6 | Total number of visits |
| 7 | Immunization done |
| 8 | Iron & Calcium supplements taken |
| 9 | Investigations done |
| 10 | Ultrasound done |

The data were retrieved and entered into Microsoft excel and analyzed using statistical software STATA version 10.1 (2011) . The descriptive statistics were used to summarize categorical variables with frequency & percentages. Resulting estimates (proportions) of study variables were expressed along with 95% Confidence intervals (95% CI).

**Results**

Table 2: Age distribution of study subjects n=200

| Age group | No. of pregnant women | Percentage (95%CI) |
|---|---|---|
| <20 years | 10 | 5% (2.4-9.0%, 95% CI) |
| 21-30 years | 138 | 69% (62.1-75.3%, 95% CI) |
| 31-40 years | 40 | 20% (14.-26.2, 95% CI) |
| >40 years | 12 | 6% (3.1-10.2%, 95% CI) |

In present study, out of 200 pregnant women, 10 (5%) (2.4-9.0% 95% CI) pregnant women were teenagers i.e. below 20 years of age, majority i.e. 138 (69%) (62.1-75.3%, 95% CI) pregnant women were in 21-30 years age group, 40 (20%) (14.-26.2, 95% CI) pregnant women were in 31-40 years age group while 12 (6%) (3.1-10.2%, 95% CI) pregnant women were in more than 40 years age. (Table 2)

Table 3: Gravidity of study subjects n=200

| Gravidity | No. of pregnant women | Percentage (95% CI) |
|---|---|---|
| Primigravida | 112 | 56% (48.8-63.0 95%CI) |
| Second pregnancy | 72 | 36% (29.4-43.1% 95% CI) |
| Third pregnancy | 16 | 8% (4.6-12.7% 95% CI) |

In present study, out of 200 pregnant women, majority i.e. 112 (56%) (48.8-63.0 95%CI) women were primigravida, 72 (36%) (29.4-43.1% 95% CI) women were pregnant for second time while 16 (8%) (4.6-12.7% 95% CI) women were pregnant for third time.(Table 3)

Table 4: Timing of First antenatal visit of study subjects n=200

| First antenatal visit | No. of pregnant women | Percentage 95% CI) |
|---|---|---|
| At 6 weeks | 34 | 17% (12.1 - 22.995%CI) |
| In 2nd trimester | 78 | 39% (32.2-46.195%CI) |
| In 3rd trimester | 88 | 44% (37.0-53.2% 95%CI) |

In present study, out of 200 pregnant women, only 34 (17%) (12.1 -22.995%CI) women had their first antenatal visit at 6 weeks, 78 (39%) (32.2-46.195%CI)

women had their first antenatal visit in second trimester while 88 (44%) (37.0-53.2% 95%CI) women had their first antenatal visit very late in third trimester.

So, majority of women had their first antenatal visit either in first or second trimester but almost two-fifth of women had delayed visit to third trimester..(Table 4)

Table 5: No of antenatal visits of study subjects n=200

| No of antenatal visits | No. of pregnant women | Percentage (95%CI) |
|---|---|---|
| <4 visits | 24 | 12% (7.8-17.3% 95%CI) |
| 4 visits | 68 | 34% (27.5-41.0% 95%CI) |
| >4 visits | 108 | 54% (48.4-61.1% 95%CI) |

In present study, out of 200 pregnant women, 24 (12%) women had less than four antenatal visits, 68 (34%) women had at least four antenatal visits while 108 (54%) women had more than four antenatal visits.

So, majority of women had four or more antenatal visits, (Table 5)

Table 6: Immunization & Medication of study subjects n=200

| Immunization & Medication | No. of pregnant women | Percentage (95%CI) |
|---|---|---|
| Tetanus Toxoid | 200 | 100% |
| Swine Flu vaccine | 44 | 22% (16.5-28.4 95%CI) |
| Iron supplements | 176 | 88% (82.7-92.2 95%CI) |
| Calcium supplements | 176 | 88% (82.7-92.2 95%CI) |

In present study, out of 200 pregnant women, 200 (100%) women had received immunization against tetanus, only 44 (22%) had received Swine Flu vaccine while 176 (88%) women were taking iron & Calcium supplements both.

So, practice of Tetanus Toxoid was universal & practice of taking iron & calcium was also good. (Table 6)

**Discussion**

In present study, out of 200 pregnant women, 10 (5%) (2.4-9.0% 95% CI) pregnant women were teenagers i.e. below 20 years of age, majority i.e. 138 (69%) (62.1-75.3%, 95% CI) pregnant women were in 21-30 years age group, 40 (20%) (14.-26.2, 95% CI) pregnant women were in 31-40 years age group while 12 (6%) (3.1-10.2%, 95% CI) pregnant women were in more than 40 years age. (Table 2)

Similar to our study, Kaur A et al found that 76.1% were in age group of 20-30 years. 15.3% and 8.6% were 30 year old.[11]

In present study, out of 200 pregnant women, majority i.e. 112 (56%) (48.8-63.0 95%CI) women were primigravida, 72 (36%) (29.4-43.1% 95% CI) women were pregnant for second time while 16 (8%) (4.6-12.7% 95% CI) women were pregnant for third time.(Table 3)

Similar to our study, Mengesha BG et al found that 409 [67.3%], of respondents had parity one and above. 184 [30.3%] were primigravida and 15 [2.4%] of the respondents had parity greater than five.[12]

In present study, out of 200 pregnant women, only 34 (17%) (12.1 -22.995%CI) women had their first antenatal visit at 6 weeks, 78 (39%) (32.2-46.195%CI) women had their first antenatal visit in second trimester while 88 (44%) (37.0-53.2% 95%CI) women had their first antenatal visit very late in third trimester.

So, majority of women had their first antenatal visit either in first or second trimester but almost two-fifth of women had delayed visit to third trimester..(Table 4)

Contrary to our study, Bhaisare KA et al found that 58 women were registered during first trimester. 37 women registered during second trimester. Only 5 women registered during third trimester.[13]

In present study, out of 200 pregnant women, 24 (12%) women had less than four antenatal visits, 68 (34%) women had at least four antenatal visits while 108 (54%) women had more than four antenatal visits.

So, majority of women had four or more antenatal visits, (Table 5)

Similar to our study, NFHS 4 reported that in India 58.6% of mothers had antenatal check up in the first trimester. 51.2% of mothers had at least 4 antenatal care visits. 30.3% mothers consumed iron & folic acid for 100 days or more during pregnancy. In Punjab, the incidence is 75.6%, 68.5% and 42.6% for the same.[14]

Similar to our study, Respress ET et al found that 53.4% had at least 7 ANC visits. 27.2% of the women had 4-6 ANC visits according to WHO.[15].

In present study, out of 200 pregnant women, 200 (100%) women had received immunization against tetanus, only 44 (22%) had received Swine Flu vaccine while 176 (88%) women were taking iron & Calcium supplements both.

So, practice of Tetanus Toxoid was universal & practice of taking iron & calcium was also good. (Table 6)

Similar to our study, Respress ET et al found that 91.0% had Iron supplementation, 51.7% had folic acid supplementation (and 94.1% had voluntary counseling and testing for HIV.[15]

Similar to our study, Eram U et al found that In rural area of Aligarh, 50% of the mothers knew the correct doses of TT injection.[16]

**Conclusion**

In present study, practice of Tetanus Toxoid immunization was universal. Practice of taking iron & calcium supplements was also good. Women were having at least four antenatal visits as per WHO but the percentage of having antenatal visit at 6 weeks was very poor. Also, Swine Flu vaccine was very poor.

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