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# Importance of lifestyle factors in pregnancy: A clinical study

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**Abstract**
**Background:** Complications in pregnancy are common and threatened miscarriage is occurring in approximately 20% of all pregnancies. The present study was conducted to determine various lifestyle factors leading to threatened abortion.
**Materials & Methods:** This study was conducted in the department of Gynaecology and Obstectrics which included 118 women. General information such as age, marital status, ethnicity, gestational age (wks), educational level; housing, number of children, pre-pregnancy BMI (kg/m$^2$), regularity of menstrual cycles; presence of nausea, history of miscarriage, history of benign gynaecological conditions; smoking status, alcohol consumption, caffeine intake, mobile phone use (in hours per day), computer use (hrs/day), history of depression or schizophrenia, extent of bleeding were recorded.
The 10-item Perceived Stress Scale (PSS) was used to measure the stress levels of the women in the one-month period preceding their presentation to the clinic.
**Results:** In our study, women with <34 years were 101 and >34 years were 17. 104 were married and 14 were unmarried, 78 were Nepalese, 30 were Chinese and 10 were from other ethnicity. Women had either high school education (100) and secondary school (18), number of children were 0 in 98 women, 1 in 14 women and 2 in 6 women. The difference was significant (P< 0.05). Patients with BMI <23 were 84 in number whereas with >23 were 34. Women with regular menstrual cycles were 102 whereas 16 had irregular cycle. The difference was significant (P< 0.01). 78 had nausea while 40 had not. 18 gave positive history of previous miscarriage while 100 did not.
102 patients gave positive history of termination of pregnancy and 108 had gynecological diseases, 112 had given history of smoking in pregnancy, 30 had 1 or more household having history of smoking, 82 had positive history of caffeine intake, 78 had history of mobile use more than 4 hours, 58 had history of computer use more than 4 hours, 16 had history of alcohol consumption during pregnancy, 18 had history of depression, 44 had high stress score, 96 gave history of spotting bleeding during pregnancy, 8 had threatened abortion. The difference was significant (P<0.05).
**Conclusion:** Lifestyle plays an important role the pregnancy. There is alteration in hormone level in pregnancy leading to miscarriage. Careful following of routine lifestyle prevent further complications in pregnancy.

**Keywords:** Miscarriage, Pregnancy, Threatened abortion

## 1. Introduction
Complications in pregnancy are common and threatened miscarriage is occurring in approximately 20% of all pregnancies. In first trimester, vaginal bleeding leads to 5.5%–42.7% risk for subsequent complete miscarriage. Threatened miscarriage, defined as vaginal bleeding before the 20th week of gestation, occurs in about 20% of pregnancies. One in three women with threatened miscarriage subsequently suffers a complete miscarriage [1].
Antepartum haemorrhage, preterm delivery, low birth weight etc. are other complications that can occur in women who experience such bleeding. Many studies have established numerous factors leading to complete miscarriage in the first trimester. They have enumerated increased maternal age, high pre-pregnancy body mass index (BMI) and low serum progesterone levels as various factors. Apart from these, lifestyle factors also play important role such as exercise, stress, cigarette smoke and alcohol intake and caffeine intake etc [2].
Factors as noted in clinical and ultrasonographic evaluation are maternal age, extent of vaginal bleeding, abdominal pain, gestational age at onset of bleeding, uterine size and fetal cardiac activity. Electromagnetic field (EMF) exposure associated with appliances like microwave ovens, computer use and mobile phone devices, has been linked in epidemiological studies to both leukemia risk and early pregnancy loss. Prolonged mobile-phone use, computer use and exposure to second-hand smoke are increasingly common and research is needed to establish

whether these exposures are associated with risk of threatened miscarriage [3].

It has been suggested that fish oil supplementation in pregnant women may protect against threatened miscarriage. A study conducted by Rossi *et al* have shown that a reduction in the spontaneous miscarriage rate with DHA use in women with antiphospholipid- syndrome with a history of recurrent miscarriages but the benefit of DHA in sporadic miscarriage is unknown. There should be teaching regarding lifestyle factors which enhances the risk of miscarriage and hence the chances of miscarriage can be diminished [4].

The present study was conducted to determine various lifestyle factors leading to threatened abortion.

## Materials & Methods

This study was conducted in the department of Gynaecology and Obstectrics which included 118 women. All were informed regarding the study and written consent was obtained. Institutional ethical committee approved the study.

General information such as age, marital status, ethnicity, gestational age (wks), educational level; housing, number of children, pre-pregnancy BMI (kg/m$^2$), regularity of menstrual cycles; presence of nausea, history of miscarriage, history of benign gynaecological conditions; smoking status, alcohol consumption, caffeine intake, mobile phone use (in hours per day), computer use (hrs/day), history of depression or schizophrenia, extent of bleeding were recorded.

The 10-item Perceived Stress Scale (PSS) was used to measure the stress levels of the women in the one-month period preceding their presentation to the clinic. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

## Results

Table I shows that women with <34 years were 101 and >34 years were 17. 104 were married and 14 were unmarried, 78 were Nepalese, 30 were Chinese and 10 were from other ethnicity. Women had either high school education (100) and secondary school (18), number of children were 0 in 98 women, 1 in 14 women and 2 in 6 women. The difference was significant (P< 0.05). Patients with BMI <23 were 84 in number whereas with >23 were 34. Women with regular menstrual cycles were 102 whereas 16 had irregular cycle. The difference was significant (P< 0.01). 78 had nausea while 40 had not. 18 gave positive history of previous miscarriage while 100 did not.

Table II shows that 102 patients gave positive history of termination of pregnancy and 108 had gynecological diseases, 112 had given history of smoking in pregnancy, 30 had 1 or more household having history of smoking, 82 had positive history of caffeine intake, 78 had history of mobile use more than 4 hours, 58 had history of computer use more than 4 hours, 16 had history of alcohol consumption during pregnancy, 18 had history of depression, 44 had high stress score, 96 gave history of spotting bleeding during pregnancy, 8 had threatened abortion. The difference was significant (P<0.05).

**Table 1:** Demographic data of patients.

| Age | Number | P value |
|---|---|---|
| <34 years | 101 | 0.02 |
| >34 years | 17 | |
| **Marital status** | | |
| Married | 104 | 0.02 |
| Single | 14 | |
| **Ethnicity** | | |
| Nepalese | 78 | 0.4 |
| Chinese | 30 | |
| others | 10 | |
| **Education** | | |
| High school | 100 | 0.01 |
| Secondary school | 18 | |
| **Housing** | | |
| Public | 112 | 0.01 |
| private | 6 | |
| **No. of children** | | |
| 0 | 98 | 0.02 |
| 1 | 14 | |
| >2 | 6 | |
| **BMI (Kg/m$^2$)** | | |
| <23 | 84 | 0.1 |
| >23 | 34 | |
| **Regular menstrual** | | |
| Yes | 102 | 0.01 |
| No | 16 | |
| **Nausea** | | |
| Yes | 78 | 0.02 |
| No | 40 | |
| **History of miscarriage** | | |
| Yes | 18 | 0.01 |
| No | 100 | |

**Table 2:** Data of patients.

| History of termination of pregnancy | Number | P value |
|---|---|---|
| Yes | 16 | 0.01 |
| No | 102 | |
| **Gynecological disease** | | |
| Yes | 10 | 0.05 |
| No | 108 | |
| **Smoked in pregnancy** | | |
| Yes | 6 | 0.02 |
| No | 112 | |
| **1 or more smokers in household** | | |
| Yes | 30 | 0.05 |
| No | 88 | |
| **History of alcohol consumption** | | |
| Yes | 16 | 0.01 |
| No | 102 | |
| **Perceives stress score** | | |
| Low | 74 | 0.05 |
| High | 44 | |
| **Caffeine intake** | | |

| | | |
|---|---|---|
| Yes | 82 | 0.01 |
| No | 36 | |
| **Computer usage** | | |
| 0-1 | 22 | 0.4 |
| 1-4 | 38 | |
| >4 | 58 | |
| **Mobile usage** | | |
| 0-1 | 16 | 0.01 |
| 1-4 | 24 | |
| >4 | 78 | |
| **History of depression** | | |
| Yes | 18 | 0.01 |
| No | 100 | |
| **Amount of bleeding** | | |
| Spotting | 96 | 0.2 |
| Wet pad | 22 | |
| **Threatened miscarriage** | | |
| Yes | 8 | 0.01 |
| No | 110 | |

## Discussion

Life style play important role in the pregnancy. It has severe deleterious effects on the foetus. Irregular lifestyle can result into threatened abortion. The present study was conducted to determine various lifestyle factors leading to threatened abortion.

We found that women >34 years of age were 17. Advanced maternal age was a significant risk factor for miscarriage in the group of women in the present study. Women aged ≥ 34 years at presentation were more likely to have a complete miscarriage than women who were younger. This is consistent with previous studies, which showed that the risk of miscarriage is generally higher in pregnant women of greater age [5, 6].

Most of the women were married, most of them were from Nepal origin, most of the women had education till high school level. Patients with BMI <23 were 84 in number whereas with >23 were 34. Women with regular menstrual cycles were 102 whereas 16 had irregular cycle. This is in agreement with the results of Saraswat *et al*. [7]

18 gave positive history of previous miscarriage which shows that previous miscarriage can lead to miscarriage in future too. This is similar to results of Lashen *et al*. [8] 16 patients gave positive history of termination of pregnancy and 10 had gynecological diseases, 112 had given history of smoking in pregnancy, 30 had 1 or more household having history of smoking, 16 had history of alcohol consumption during pregnancy and 82 had positive history of caffeine intake. This shows that smoking and alcohol has harmful effect on foetus. This is in agreement with Maconochie *et al*. [9] Authors have suggested the role of alteration in progesterone hormone in pregnancy and pregnant women are at high risk of threatened abortion [10].

We found that 78 had history of mobile use more than 4 hours, 58 had history of computer use more than 4 hours. This shows that excessive mobile and computer use can be precipitating factor leading to miscarriage. Depression is another important factor leading to miscarriage. In our study, 18 had history of positive history of depression. 44 had high stress score. This is in agreement with the results of Ong CY *et al*. [11].

## Conclusion

Lifestyle plays an important role the pregnancy. There is alteration in hormone level in pregnancy leading to miscarriage. Careful following of routine lifestyle prevent further complications in pregnancy.

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