

Induced abortion and risk of subsequent miscarriage during pregnancy in perspective of Bangladesh

Repon Kumer Saha^{1*}, Shaila Afroja¹, Sadia Tanjin¹, Ekram Ahmed Chowdhury¹, Priyanka Roy² and Jahidur Rashid²

Accepted 14 July, 2015

¹Department of Pharmacy, East West University, Dhaka, Bangladesh.

²Center for Medical Ultrasound and Doppler (CMUD) (Pvt.) Limited, Dhaka Bangladesh.

ABSTRACT

A total of 1027 pregnant women were included in the study and interviewed as per the questionnaire. The patients were within 14 to 40 years of age and were mostly from low income families to consider the impact of socioeconomic status on pregnancy outcome. During the study period at CMUD (Centre for medical ultrasound and Doppler), UPHCP (Urban Primary Health Care Program) and Dhaka diagnostic centre in Bangladesh, patients coming for the ultrasound imaging were interviewed as per the questionnaire. Different clinical as well as generalized information including their address, awareness on pregnancy complications, number of children, abortions, sleeping time, history of asthma, vaccination, morning sickness, history of taking medicines during pregnancy, visual acuity of eye, eating habits and number of times visited facility during pregnancy were recorded for further analysis. The findings suggest that observed class differences in pregnancy outcome are attributable to the mother's personal characteristics and her lifestyle. However, based on this study there are a number of risk factors and behavioural, social issues that need to be addressed to ensure reduction in maternal mortality as well as ensuring appropriate maternal health.

Key words: Pregnancy, Complication during pregnancy, Abortion during pregnancy, first conceived age, Contraception method.

*Corresponding author. E-mail: drks@ewubd.edu or reponsaha@yahoo.com. Tel: +88-02-9882308, Ext. 128, Fax: +88-02-8812336. Mobile phone: +88-0175-6513045.

INTRODUCTION

Pregnancy is the development of one or more offspring, known as an embryo or foetus, in a woman's uterus. It is a period during which well-being often declines and there is increased complication. There is a higher prevalence of complication during pregnancy. This may be due to hormonal changes compounded by stress, physical limitations and environmental factors. Abortion is the termination of pregnancy by the removal or expulsion from the uterus of a foetus or embryo before viability. An abortion can occur spontaneously, in which case it is often called a miscarriage, or it can be

purposely induced. The term abortion most commonly refers to the induced abortion of a human pregnancy. After viability, the relevant procedure is referred to as a "late termination of pregnancy". Modern medicine utilizes medications and surgical procedures for induced abortion (NIPORT, 2013). Maternal death is caused by direct, indirect and other related factors.

The major direct causes of maternal deaths in Bangladesh are postpartum haemorrhage, eclampsia, complications of unsafe abortion, obstructed labour, postpartum sepsis, and violence and injuries. About one-

fourth of the total maternal death in rural Bangladesh is due to unsafe abortion and related complications (NIPORT, 2013). As per BMMS (Bangladesh Maternal Mortality and Health Care Survey) 2010, the 2 major causes of maternal death were haemorrhage (31%) and eclampsia (20%). Both of these complications require management at a facility by a trained provider (BMMS, 2010). This was a consequence of improved access to care, substantially better education among women, improved awareness of services and the need for care and better economic conditions. In addition, declining fertility (from 3.2 to 2.5 children per women between 2001 and 2010) reduced high-risk higher parity births. Overall death rates have declined significantly among women in most reproductive age groups; while there have been large declines in deaths due to material causes, infections, circulatory conditions and even suicides (BMMS, 2010). The objectives of this study aim to (1) To review existing literature and conduct statistical analyses to establish the prevalence and determinants of pregnancy (2) To assess the individual, familial and educative impact of pregnancy (3) To identify and assess the impact of interventions for pregnancy and (4) To propose a conceptual framework for research and interventions to prevent and mitigate the impact of pregnancy.

METHODOLOGY

Study design

This is a cross sectional (descriptive study), where data was collected through interviews with a structured questionnaire as well as recorded data of each patient. The study protocol was reviewed and approved by the supervisor.

Study area

The study was carried out in CMUD an education and research centre for ultrasound imaging techniques as well as analysis of blood samples, UPHCP and Dhaka diagnostic centre which are located in Dhaka Metropolitan City.

Study population

A total of 1027 pregnant women were included in the study and interviewed as per the questionnaire. The patients were within 14 to 40 years of age and were mostly from low income families.

Data collection

During July 2013 to January 2014, the study period at

CMUD, UPHCP and Dhaka diagnostic centre, patients coming for the ultrasound imaging were interviewed as per the questionnaire. Different clinical as well as generalized information including their address, monthly income, weight, height, blood pressure, awareness on pregnancy complications, number of children, abortions, sleeping time, history of asthma, vaccination, morning sickness, history of taking medicines during pregnancy, water retention, kidney diseases, bi-parietal diameter, femur length, expected date of delivery, positioning of the child in placenta, visual acuity of eye, eating habits and number of times visited facility during pregnancy were recorded for further analysis.

Statistical analysis

Data were organized, tabulated and aggregated using Microsoft excel. Means and proportions of the epidemiological, social, behavioral and clinical parameters were compared amongst the study population.

RESULTS

Number of abortion time amongst the respondents

In the study, 35% of the respondents never had any abortions. 49% of the respondents had aborted in 1st trimester. Figure 1 show that blue colour indicates 1st trimester (49%), red colour indicates 2nd trimester (15%), green colour indicates 3rd trimester (1%) and purple colour indicates no abortion (35%).

Comparison of number of abortions with age

Out of 430 abortions reported by the respondents 229 abortions took place within the age range 13 to 20 (53%), placing this age group at a higher risk compared to the older pregnant women. Figure 2 show that blue colour indicates age range 13 to 20 (53%), red colour indicates age range 21 to 25 (36%) and green colour indicates age range 26 to 30 (11%).

Comparison of age when first conceived

The respondents were divided into 3 groups according to their age: 13 to 20, 21 to 25 and greater than 26. Majority of the respondents were found to conceive within 13 to 20 years age. Alarming 55% of the respondents first conceived during their teen years (13 to 20 age groups). Figure 3 show that blue colour indicates age range 13 to 20 (55%), red colour indicates age range 21 to 25 (29%), green colour indicates age range 26 to 30 (2%) and purple colour indicates no age range of marriage (14%).

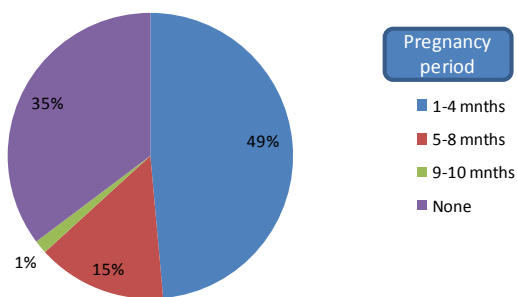


Figure 1. Pie chart illustrating the number of abortion time within the sample population.

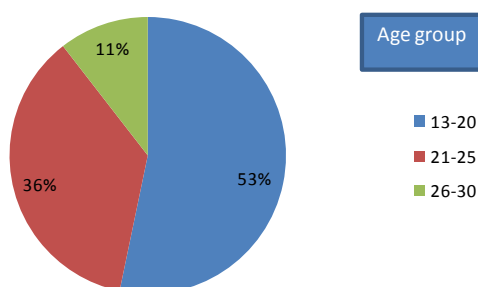


Figure 2. Pie chart illustrating the comparison of the number of abortions with age within the sample population.

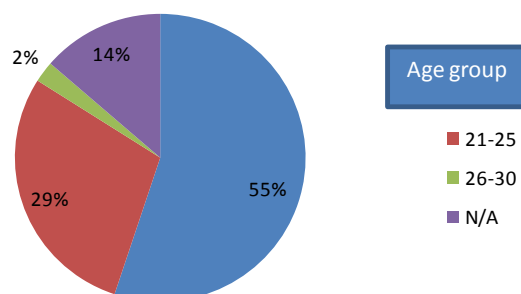


Figure 3. Pie chart illustrating the comparison of age when first conceived within the sample population.

Percentage of abortion against working women

In the study, 95.73% of the respondents had abortions while they did working at home or outside. Figure 4 show that 95.73% patients were working at home or outside and 4.27% were not.

Risk of abortion amongst methods of contraception used

The contraption methods were compared against the average number of abortions amongst the study population and the women using oral pill were found to

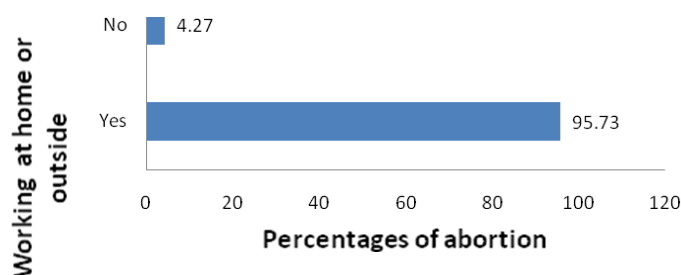


Figure 4. Percentage of abortions occurring against working at home or outside.

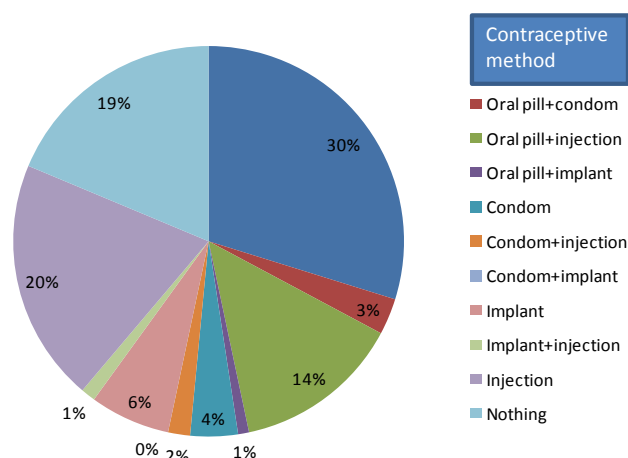


Figure 5. Percentage of average abortions occurring against method of contraception used.

have the highest percentage of average abortions (30%). Injectable was second highest in this regard (20%). Figure 5 show that red colour indicates contraceptive method of oral + condom (3%), green colour indicates oral pill + injection (14%), purple colour indicates oral pill + implant (1%), blue colour indicates condom (30%), orange colour indicates condom + injection (2%), sky colour indicates condom + implant (4%), pink colour indicates implant (6%), light green colour indicates implant + injection (1%), light purple colour indicates injection (20%) and light sky colour indicates using no contraceptive method (19%).

Comparison of number of aborted and not aborted against medicine taken

In the study, 49.73% of the respondents never had any abortions while they were not taking medicine during pregnancy. 50.27% of the respondents had at least one abortion while they were taking medicine during pregnancy. Figure 6 show that 50.27% patients had at

least one abortion with medicine taken and 49.73% patients had not.

Comparison of number of aborted and not aborted against vaccines in childhood

In the study, 55.36% (fifty five point three six percent) of the respondents never had any abortions while they were taking vaccines in childhood. 44.64% (forty four point six four percent) of the respondents had at least one abortion while they were not taking vaccines in childhood. Figure 7 show that 55.36% patients had not any abortion with vaccine taken in childhood and 44.54% had at least one abortion.

Percentages of abortion against blood group

The blood groups were compared against the average number of abortions amongst the study population and the women in blood group AB- were found to have the highest percentage of average abortions (17%). Blood

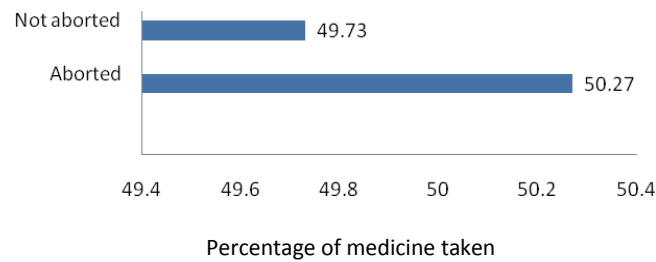


Figure 6. Bar diagram illustrating the percentage of comparison of the number of abortions and not aborted with medicine taken within the sample population.

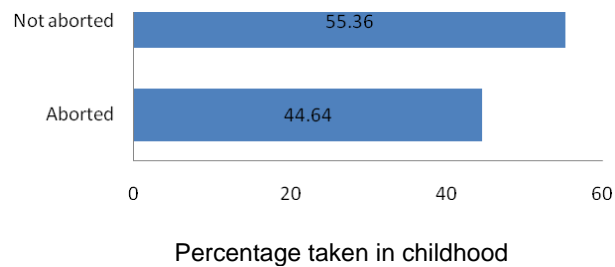


Figure 7. Bar diagram illustrating the percentage of comparison of the number of abortions and not aborted with vaccines taken in childhood within the sample population.

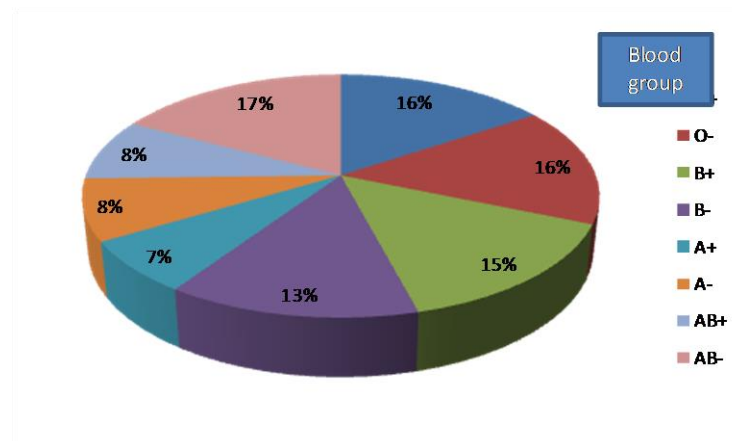


Figure 8. Pie chart illustrating percentage of average abortions occurring against blood group.

group O+ and O- were second highest in this regard (16%). Figure 8 show that red colour indicates blood group of O- (16%), green colour indicates B+ (15%), purple colour indicates B- (13%), sky colour indicates A+ (7%), orange colour indicates A- (8%), light sky colour indicates AB+ (8%), blue colour indicates O+ (16%) and pink colour indicates AB- (17%).

Comparison of number of abortions with menstrual cycle

While comparing the menstrual cycle with number of abortion and not aborted, it was found that 100% of abortions took place within the abnormal menstrual cycle making this abnormal menstrual cycle a high risk and it

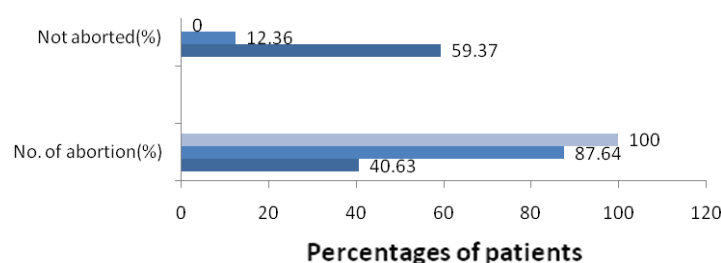


Figure 9. Bar diagram illustrating the percentage of comparison of the number of abortions and not aborted with menstrual cycle within the sample population.

was found that 59.37% of abortions did not take place within the normal menstrual cycle making this normal menstrual cycle safe. Figure 9 show that light sky colour bar indicates abnormal menstrual cycle, sky colour bar indicates average menstrual cycle and blue colour bar indicates normal menstrual cycle.

DISCUSSION

Our study provides a contemporary assessment of maternal and neonatal health associated with pregnancy in women. Even though the study was carried out from one centre only, the permanent address of all the participants are widely distributed throughout Bangladesh. The study indicates that a higher risk of miscarriage and willingly abortion, particularly those occurring within the first 3 months of gestation, is associated with prior first trimester induced abortion. Yuelian et al. (2003) reported 15% of the respondents are aborted in 1st trimester. In our study, we recruited 1027 participants from 3 clinics and 49% of the respondents had aborted in 1st trimester. It is higher than the Yuelian et al. (2003) report. Because for a pregnancy to succeed, the mother's body must supply the right amount of hormones and nutrients to the baby, and the foetus must develop correctly throughout the entire pregnancy. If either of these conditions is not met, then the pregnancy might end early.

Early miscarriages usually happen because the embryo is not developing as it should. Chromosome problems are thought to be the most common cause. These problems usually happen for no reason and are unlikely to happen again. Another health issue that is being presented in this study is the matter of interrupted pregnancy or abortion. It is noted that teenage mothers who experience spontaneous abortions represented 64.3 and 60% of the induced abortions. (Joan et al., 2013). In our study out of 430 abortions reported by the respondents 229 abortions took place within the age range 13 to 20 (53%), placing this age group at a higher risk compared to the older pregnant women. This result is less than Joan et al.

(2013) report. Bangladeshi females frequently are married in childhood. Despite a law prohibiting marriage for females younger than 18, rural women aged 20 to 49 reported a median age at marriage of 15 years in a 1999 to 2000 national survey. At the time of marriage, young women usually know little or nothing of sex and sexual initiation can be a traumatic experience. Alarming 55% of the respondents first conceived during their teen ages (15 to 20 age groups) which are in line with the age of early marriage. But Olorunfemi (2012) reported that the prevalence of teenage pregnancy in the study population was 22.9%.

So our result is higher than Olorunfemi (2012) report. Bangladesh has one of the highest rates of child-marriage in the world. Most of the girls marry before the age of 18, and over one third even before the age of 15. Early marriage leads to early pregnancy, as the girls are expected to give birth within the first year of marriage. As per evidence from studies in developing world one-third to one-half of women become mothers within 19 years of age, making pregnancy related causes as leading causes of death (Viegas et al., 1992). Previous studies found that pre-term delivery; still birth, fetal distress, birth asphyxia, anemia, low birth weight, pregnancy-induced hypertension (PIH) and spontaneous abortion were most frequently encountered complications during teen age (Brennan et al., 2005; Goonewardena et al., 2005). The likelihood of haemorrhage and pre-eclampsia was significantly higher among pregnant teenagers compared to the women in their twenties (Khandait, 2000). As a result this group of patient is at a higher risk of abortion or even maternal mortality. When comparing the total number of abortions, it was found that 95.73% of total abortions took place while they did working at home or outside. Lawrence et al. (2005) noted that reasons most frequently cited were that having a child would interfere with a woman's education, work or ability to care for dependents (74%). So the result of our study is higher than Lawrence et al. (2005) report. Pregnant women need caring and rest. But in Bangladesh, there is gender discrimination. So in here working women do the work both outside and inside home. Maximum husbands do

not help them to maintain their household work. Working women do not get enough time to rest. They have more pressure mentally and physically. So the result of our study is higher than Lawrence et al. (2005) report. Amongst the method of contraception use, oral pill (30%) and injectable were found to be used highest while risk of abortion was highest with the use of implants. 46% of women had not used a contraceptive method in the month they conceived, mainly because of perceived low risk of pregnancy and concerns about contraception (cited by 33 and 32% of nonusers, respectively).

The male condom was the most commonly reported method among all women (28%), followed by the pill (14%). Inconsistent method use was the main cause of pregnancy for 49% of condom users and 76% of pill users; 42% of condom users cited condom breakage or slippage as a reason for pregnancy. Substantial proportions of pill and condom users indicated perfect method use (13 to 14%). As many as 51,000 abortions were averted by use of emergency contraceptive pills in 2000 (Rachel et al., 2002). Concern about the effects of alcohol and drug use during pregnancy is intertwined with debates about abortion. This study examines how women describe alcohol, tobacco and/or drug use (ATOD) as reasons for deciding to have abortions and assesses the differences between women reporting and not reporting ATOD as reasons for deciding to have an abortion. 61% who reported drugs as a reason used drugs, with 88% using more than once/week (Sarah et al., 2012). But in our study 49.73% of the respondents never had any abortions while they were not taking medicine during pregnancy. 50.27% of the respondents had at least one abortion while they were taking medicine during pregnancy. It is lesser than the result of Sarah et al. (2012).

It's the same principle by which anti-vaccinationists try to blame vaccination for autism. There are a large number of children every year in which the first symptoms of autism are noticed after vaccination. Unless one controls for this background rate and demonstrates that there is a higher risk of autism after vaccination. The same holds true for miscarriages, but it's even more difficult given the even larger number of miscarriages. After all, only around 1% of children is diagnosed with autism or autism spectrum disorder, while around 15 to 20% of all pregnancies end in miscarriage (Orac, 2012). In our study, 55.36% of the respondents never had any abortions while they were taking vaccines in childhood. 44.64% of the respondents had at least one abortion while they were not taking vaccines in childhood. Another crucial factor was that 98% of the patients did not know the blood group of their husband and 59% of the patients did not know their own blood group along with their husband's. 4.5% patients had an Rh negative blood group.

The women in blood group AB- were found to have the

highest percentage of average abortions (17%). Blood group O+ and O- were second highest in this regard (16%). These patients are presenting a higher risk to their foetus since they may develop haemolytic anaemia after birth if the Rh factors of mother and child is not similar. A comparative study of blood group of different normal populations of Al-Nassiriyah city with RA Patients of Khalid (2008) study confirm that the blood group A is increased in patients of repeated abortion. In another study by Malekasgar (2004), the results of increased of blood group A and blood group AB in RA patient's were agree with Khalid (2008) results. While comparing the menstrual cycle with number of abortion and not aborted, it was found that 100% of abortions took place within the abnormal menstrual cycle making this average menstrual cycle a high risk and it was found that 59.37% of abortions did not take place within the normal menstrual cycle making this normal menstrual cycle safe. Abnormal, heavy, prolong menstrual cycle cause anemia that is also cause for miscarriage or abortion.

Conclusion

Pregnancy related complications are still a major problems in Bangladesh even though Bangladesh is well on its way towards achieving the millennium Development goal 5 (Improving maternal Health). Due to lack of proper facilities, awareness and education on these complications are extremely important to improving maternal health further. As a result this survey has been conducted to analyze the awareness as well as the behavior of pregnant women within the study population in ensuring safe pregnancy. Study has also been conducted on the effect of the level of education on marital age and abortion.

ACKNOWLEDGEMENT

The authors are grateful to Prof. Dr. Chowdhury Faiz Hossain, Ph.D.; Chairperson and Professor, Department of Pharmacy, East West University and also thankful to project manager of Urban Primary Health Care Program (UPHCP) (Nogor Matrishodon), managing director of Center for Medical Ultrasound and Doppler (CMUD) (Pvt) LTD and Dhaka Diagnostic Center for helping during data collection of my research project.

REFERENCES

- Bangladesh Maternal Mortality and Health Care Survey (BMMS), 2010. Summary of key findings and implications, Bangladesh.
- Brennan L, Donald J, Shlomowitz R (2005). Teenage births and final adult height of mothers in India. *J. Biosocial Sci. Res.* 37:185-191.
- Goonewardena I, Deeyagaha W (2005). Adverse effects of teen age pregnancy. *Ceylon Med. J. Res.* 50:116-120.
- Joan M, Isaac D, Tazhmoye V, Samantha G, Donovan A (2013). The

- rate of pregnancy in Trinidad and Tobago: A comparison between pregnant teenagers and pregnant adults registered at three health centres. *Int. J. Med. Public Health. Res.* 3:129-133.
- Khalid G (2008). The association between ABO blood group and spontaneous abortion. *Basrah J. Sci. Res.* 26(1):1-10.
- Khandait D, Ambadekar N, Zodepy S, Vasudeo N (2000). Maternal age as a risk factor for stillbirth. *Indian J. Public Health. Res.* 44: 28-30.
- Lawrence B, Lori F, Lindsay A, Susheela S, and Ann M (2005). Reasons U.S. Women Have Abortions: Quantitative and Qualitative Perspectives. *Perspectives on Sexual and Reproductive Health. Res. Inter.* 37(3):110-118.
- NIPORT, 2013. Bangladesh demographic and health survey, Bangladesh.
- Olorunfemi E (2012). A comparative analysis of predictors of teenage pregnancy and its prevention in a rural town in Western Nigeria. *Int. J. Equity in Health. Res.* 11:37.
- Orac R (2012). Vaccine and miscarriages: More dumpster diving in the VAERS database. *Respectful Insolence. Res. Inter.* 11(8):911-921.
- Rachel K, Jacqueline E, Stanley K (2002). Contraceptive use among U.S. Women Having Abortions in 2000-2001. *Perspectives on Sexual and Reproductive Health. Res. Inter.* 34(4):294-303.
- Sarah C, Lyndsay A, Danielle S, Diana G (2012). Alcohol, tobacco and drug use as reasons for abortion. *Alcohol and Alcoholism. Res. Inter.* 49 (4):1-9.
- Viegas A, Wiknsosastro G, Sahagun H, Chaturachinda K, Ratnam S (1992). Safe childbirth needs more than medical services. *World Health Forum. Res.* 13:59-65.
- Yuelian S, Yan C, Ersheng G, Jorn O, and Weijin Z (2003). Induced abortion and risk of subsequent miscarriage. *Int. J. Epidemiol. Res.* 32:449-454.