**Middle Black Sea Journal of Health Science / Mid Blac Sea J Health Sci** **October 2023; 9(4): 550-562**

**RESEARCH ARTICLE** **DOI:** DOI: 10.19127/mbsjohs.1242118

# Analysis of Risk Factors and Risky Pregnancies Among Pregnant Women Who Admitted to Hospital for Prenatal Care

Hasan Ulubaşoğlu[1](ID), Saime Şahinöz[2](ID), Turgut Şahinöz[3](ID), Pınar Ulubaşoğlu[4](ID)

[1]T.R. Ministry of Health Ankara City Hospital, Gynecology Hospital, Gynecology Clinic, Ankara, Turkey
[2]Ordu University, Faculty of Medicine, Department of Public Health, Ordu, Turkey
[3]Ordu University, Faculty of Health Sciences, Department of Health Management, Ordu, Turkey
[4]T.R. Ministry of Health Ankara City Hospital, General Hospital, Clinic of Internal Medicine, Ankara, Turkey

Received: 25 January 2023, Accepted: 26 July 2023, Published online: 29 October 2023


## Abstract

**Objective:** Every woman wants to have a healthy pregnancy and have a healthy baby, but it brings important risks. Risky pregnancies are with many different dimensions that negatively affect maternal and infant health. The aim of this study is to determine the frequency of risk factors leading to risky pregnancies which are important for public health, to reveal the reasons and to offer solutions.

**Methods:** This is a cross – sectional study of 409 married women who applied to the hospital for prenatal care. A questionnaire prepared by the researchers was used for data collection by face-to-face interview technique. Percentage, mean, and chi-square test were used to evaluate the data.

**Results:** Although pregnancy is a physiological process, 67.7% of the pregnant women had at least one risk factor and 27.6% had more than one risk factor. Risk factors such as having caesarean section, having four or more pregnancies, being 35 and over age, unwanted pregnancy status and having less than two years between the last two pregnancies were found to be the most common risk factors seen in pregnant women.

**Conclusion:** Because risky pregnancies are an important public health problem and most of them are preventable; preconceptional care should be expanded to control the mother and baby before threatening their health.

**Keywords:** Risk factors, pregnancy, risky pregnancy, Turkey

**Suggested Citation:** Ulubaşoğlu H, Şahinöz S, Şahinöz T, Ulubaşoğlu P, Analysis of Risk Factors and Risky Pregnancies Among Pregnant Women Who Admitted to Hospital for Prenatal Care Mid Blac Sea Journal of Health Sci, 2023;9(4):550-562.



**Address for correspondence/reprints:**

**E-mail:** drsaime@hotmail.com;

Saime Şahinöz

**Telephone number:** +90 (536) 433 47 82

## INTRODUCTION

Every woman wants to have a healthy pregnancy and have a healthy baby. Pregnancy is a physiological condition, but it brings important risks. Risky pregnancies are defined as high-risk pregnancies with many different dimensions that negatively affect maternal and infant health (1). The conditions that the mother and babies' life is in high risk are defined as high-risk pregnancies (2).

Risk is the probability of occurrence of undesirable conditions with the presence of one or more risk factors, while "risk for pregnancy" is the possibility of some pre-existing or possible complications that may occur during pregnancy (3).

According to the Turkey Demographic and Health Survey (TDHS-2018) report; 65.70% of pregnancies occurred in Turkey in the past five years, had at least one risk factor, and the order of frequency of the most common risk factors were birth interval (less than 24 months), age of mother (above 34 or below 18) and number of pregnancies (more than three) (4).

Risky pregnancies may develop due to a woman's existing health problem or may occur due to pregnancy-related reasons. Close monitoring and care are needed to reduce the negative effects of risky pregnancies on maternal and child health. Care before and during pregnancy reduces risky pregnancies and ensures that the mother and the baby have a healthy pregnancy and delivery process in a healthy way (2).

There are many risk factors that cause risky pregnancies. These factors can be analysed under four headings. These are (2, 6):1. Risks existing before pregnancy, 2. Mother's existing diseases, 3. Risks during pregnancy, 4. Risks arising from the baby.

It is the duty and responsibility of primary health care services to diagnose the risk factors in pregnancy at the earliest stage, to prevent the damages caused by the risks and to protect the health of mother and baby. For this purpose, the services carried out in our country are known as prenatal care (PC) services and midwives have important duties in carrying out this service (5).

The PC provided to pregnant women by the Ministry of Health consists of four follow-ups. First one of this follow-ups is carried out before the first 14 weeks of pregnancy, the second between 18-24 weeks, third follow-up between 28-32 weeks and final follow-up at between 36-38 weeks (6). According to the results of Turkey Demographic and Health Survey (TDHS-2018); the rate of women receiving PC at least once during pregnancy was 90.30%, the rate of women receiving four times of PC was 88.90% in Turkey (4).

It is accepted that the most important way of reducing risky pregnancies is preconceptional care (7, 8). Preconceptional care is a preventive health service aimed to protecting maternal and child health which was introduced in 1980s.

The aim of preconceptional care is to determine risky pregnancies in the early period and to take necessary precautions. In short, primary prevention is to prevent maternal and infant mortality by reducing the factors that will adversely affect maternal and child health (9).

The Ministry of Health has established "Risky Pregnant Units" in Community Health Centers to perform prenatal care of risky pregnant women identified in primary health care facilities. This unit evaluates risky pregnant women by visiting them at home (10). As the outcome of high-risk pregnancies cannot be predicted, follow-up should be performed by specialist physicians (perinatology or gynaecology) in tertiary health care institutions and if necessary, the patients should be hospitalized (2).

Very few scientific studies have been conducted in Turkey about risky pregnancies. This research completes this deficiency for our country. It also provides a current, cultural, and regional perspective on risky pregnancies in terms of world literature.

The aim of this study is to determine the frequency of risk factors leading to risky pregnancies which are very important for public health, to reveal the reasons and to offer solutions.

## METHODS

This is a cross-sectional study conducted on 409 married volunteer pregnant women who applied to the hospital for prenatal care. All married pregnant women who applied to Gümüşhane State Hospital and Samsun Training and Research Hospital between 01.11.2018-31.12.2018 and who accepted to participate in the study were included in the study and a sample was not selected. Before starting the research, the ethics committee approval dated 30.10.2018 and numbered 2018/8 was obtained from Gümüşhane University Scientific Research and Publication Ethics Committee and all procedures were applied in conformity with the Declaration of Helsinki. All participants provided their informed consent.

### *Data collection*

A questionnaire prepared by the researchers was used for data collection. The research data were obtained by the researchers by filling in the "pregnant questionnaire" to pregnant women by face-to-face interview technique. Before filling out the questionnaire, pregnant women who accepted to take part in the research were informed about the purpose of the study.

### *Statistical Analysis*

Percentage, mean, and chi-square test were used to evaluate the data. P value ≤0.050 (95% confidence interval) was considered significant. Risk groups were determined according to the literature.

## RESULTS

It was found that 75.3% of the 409 pregnant women included in the research group were in

the 18-34 age range, 75.7% were housewives and 29.8% had primary and lower education levels.

When the current risk analysis of pregnant women was considered; it was found that 32.3% of pregnant women did not have any risk factors, 67.7% had at least one risk factor and 27.6% had more than one risk factor.

When the risk factors in pregnant women were examined; having undergone caesarean section (38.1%), having four or more pregnancies (30.6%), those who were 35 years old and above (23.2%), unwanted pregnancy status (23.2%), and less than two years between the last two pregnancies (20.30%) were the most common risk factors in pregnant women respectively (Table 1).

**Table 1:** Risk factors determined in pregnant women participating in the study (n = 409)

| Risk Factors | Number (%*) |
|---|---|
| Pregnant women with at least one risk factor | 277 (67.70) |
| Pregnant women with multiple risk factors | 144 (35.20) |
| Having undergone caesarean section | 153 (37.40) |
| Having 4+ pregnancy | 125 (30.60) |
| Age of the pregnant woman (over 35+ and under 18) | 106 (25.90) |
| Unwanted pregnancy | 95 (23.20) |
| Less than two years between the last two pregnancies | 83 (20.30) |
| Having a baby below 2500 grams at the last birth | 47 (11.50) |
| Cigarette, alcohol, or other substance abuse | 35 (8.60) |
| Having a baby more than 4500 grams in the last birth | 33 (8.10) |
| Hypertension | 29 (7.10) |
| Premature birth in previous pregnancies (22-37 weeks) | 28 (6.80) |
| Multiple pregnancy | 21 (5.10) |
| Abnormalities of placenta | 18 (4.40) |
| 3 or more consecutive spontaneous abortions | 14 (3.40) |
| Anaemia | 14 (3.40) |
| Urinary tract infection | 12 (2.90) |
| Diabetes (Insulin dependent) | 9 (2.20) |
| Trauma (such as falls, accidents) | 9 (2.20) |
| Termination of previous pregnancy with stillbirth | 8 (2.00) |
| Blood (Rh) mismatch | 8 (2.00) |
| Having a febrile rash disease | 7 (1.70) |
| Pregnancy toxaemia (preeclampsia, eclampsia) history | 6 (1.50) |
| History of giving birth to a baby with anomaly | 5 (1.20) |
| Pelvic mass | 2 (0.50) |

** Rate among risky pregnancies*

When the distribution of risky pregnancies in the research group according to age groups was examined; risky pregnancies were found to the groups was significant (p <0.010) (Table 2).

When the distribution of risky pregnancies according to education groups was examined; it was found that risky pregnancies were inversely proportional to education level and risk ratio decreased significantly (p <0.010) as education level increased (Table 2).

When the distribution of risky pregnancies according to their job status was examined; be the highest in the 35 and above age group, secondly in the 15-19 age group, increasing after the age of 20 and the difference between since retired individuals are naturally 35 years and older, risky pregnancies were highest, and secondly, they were higher in the housewife's group and the difference between the groups was significant (p <0.010) (Table 2).

No significant relationship was found between risky pregnancies and the place of residence and the economic level of women (Table 2).

**Table 2:** Risky pregnancies according to some demographic characteristics of pregnant women in the research group

| Characteristic | | Healthy Pregnancy | Risky Pregnancy | Total (409) | |
|---|---|---|---|---|---|
| | | n (%[a]) | n (%[a]) | N (%[b]) | $x^2$ |
| **Age groups** | 15-19 | 3 (20.00) | 12 (80.00) | 15 (3.70) | **70.09*** |
| | 20-24 | 33 (47.80) | 36 (52.20) | 69 (16.80) | |
| | 25-29 | 65 (48.50) | 69 (51.50) | 134 (32.70) | |
| | 30-34 | 31 (32.30) | 65 (67.70) | 96 (23.40) | |
| | 35+ | 0 (0.00) | 95 (100.00) | 95 (23.40) | |
| **Educational Status** | Primary School | 28 (23.00) | 94 (77.00) | 122 (29.80) | **10.57*** |
| | Secondary School | 27 (30.30) | 62 (69.70) | 89 (21.80) | |
| | High School | 53 (42.10) | 73 (57.90) | 126 (30.80) | |
| | University Associate Degree + | 24 (33.30) | 48 (56.70) | 72 (17.60) | |
| **Occupational status** | Housewife | 80 (31.00) | 178 (69.00) | 258 (63.10) | **22.45*** |
| | Public sector | 48 (46.60) | 55 (53.40) | 103 (25.20) | |
| | Retired | 4 (8.30) | 44 (91.70) | 48 (11.70) | |
| **Residential Place** | Rural | 20 (34.50) | 38 (65.50) | 58 (14.20) | 0.15 |
| | Urban | 112 (31.90) | 239 (68.10) | 351 (85.80) | |
| **Economic Status** | Bad | 8 (30.80) | 18 (69.20) | 26 (6.40) | 0.74 |
| | Medium | 114 (31.80) | 244 (68.20) | 358 (87.50) | |
| | Good | 10 (40.00) | 15 (60.00) | 25 (6.10) | |
| **Total** | | 132 (32.30) | 277 (67.70) | 409 (100.00) | |

[a] row percentage, [b]column percentage, *p<0.001

In addition to these findings, 33.00% of pregnant women stated that they were extremely stressed during pregnancy and 13.20% stated that they had had medical abortion before.

When the complaints of pregnant women were examined; it was found that 7.80% had complaints of oedema, 6.60% had bad smelling vaginal discharge, 3.70% had excessive weight gain, 2.90% had not gained weight and 2.90% had decreased baby movements.

When the distribution of risky pregnancies in the research group according to the desired pregnancy was examined; it was found that the rate of risky pregnancies (81.10%) was

significantly higher in women who unwantedly became pregnant (Table 3).

When the distribution of risky pregnancies was examined according to the woman's desire for another child; it was found that the rate of risky pregnancies (81.10%) was significantly higher in women who did not want another child (p <0.010) than those who wanted another child (Table 3).

When the distribution of risky pregnancies according to the total number of pregnancies was examined; it was found that risky pregnancies were directly proportional to the number of pregnancies and the risk of pregnancy increased significantly (p <0.010) as the number of pregnancies increased. Risky pregnancy rate was 37.80% at the first-time pregnant women (primigravida), while this rate was found to increase to 80.80% in women with four and more pregnancies (Table 3).

It was found that the risky pregnancy rate (74.10%) was significantly higher in women who stated that they were over-stressed during pregnancy (p <0.010) (Table 3).

**Table 3:** Risky pregnancies according to some characteristics of pregnant women in the research group

| **Characteristic** | | **Healthy Pregnancy n= 132** | **Risky Pregnancy** n=277_ | **Total n=** | |
|---|---|---|---|---|---|
| | | n (%[a]) | n (%[a]) | N (%[b]) | $x^2$ |
| Those who wanted to become pregnant | Unwanted<br>Wanted | 18 (18.90)<br>114 (36.30) | 77 (81.10)<br>200 (63.70) | 95 (23.20)<br>314 (76.80) | **10.05**** |
| To want another child | Wants<br>Does not want | 106 (43.10)<br>26 (16.00) | 140 (56.90)<br>137 (84.00) | 246 (60.10)<br>163 (39.90) | **33.03**** |
| Total number of pregnancies | 1<br>2-3<br>4+ | 56 (62.20)<br>52 (26.80)<br>24 (19.20) | 34 (37.80)<br>142 (73.20)<br>101 (80.80) | 90 (22.00)<br>194 (47.40)<br>125 (30.60) | **49.36**** |
| History of extreme stress during pregnancy | Yes<br>No | 35 (25.90)<br>97 (35.40) | 100 (74.10)<br>177 (64.60) | 135 (33.00)<br>274 (67.00) | **3.72*** |
| Total number of abortions | 0<br>1-2<br>3+ | 103 (35.20)<br>26 (27.10)<br>3 (15.00) | 190 (64.80)<br>70 (72.90)<br>17 (85.00) | 293 (71.60)<br>96 (23.50)<br>20 (4.90) | 5.03 |
| Time between last two pregnancies | Less than two years<br>2+ year | 14 (23.00)<br>118 (33.90) | 47 (77.00)<br>230 (66.10) | 61 (14.90)<br>348 (85.10) | 2.85 |
| Perception of health status | Good<br>Medium<br>Bad | 79 (29.30)<br>52 (38.50)<br>1 (25.00) | 191 (70.70)<br>83 (61.50)<br>3 (75.00) | 270 (66.00)<br>135 (33.00)<br>4 (1.00) | 3.63 |

[a] row percentage, [b] column percentage, *p<0.050, **p<0.001

The risky pregnancy rate increased in direct proportion to the number of abortions, but the relationship was not significant; again, it was found that the risky pregnancy rate (77.00%) was higher in pregnant women whose duration between the last two pregnancies was less than two years, but the difference was not significant.

No significant relationship was found between the pregnant women's own perception of health and risky pregnancy (Table 3).

## DISCUSSION

Factors leading to risky pregnancies in the literature in the simplest way are listed as; maternal age, number of births, frequency of birth, caesarean section, maternal alcohol and

tobacco consumption, maternal diseases, pregnancy complications, unwanted pregnancies and abortions and low socio-economic level (2, 6).

It was found that 32.30% of 409 pregnant women included in the research group did not have any risk factors, 67.70% had at least one risk factor and 27.60% had more than one risk factor.

Turkey Demographic and Health Survey (TDHS-2018) report; 65.70% of pregnancies are in any risk category and the most common risk factors are that the birth interval is less than 24 months (10.10%) according to the frequency order, the mother's age is over 35 or under 18 possible (9.50%) and having four or more pregnancies (7.10%) (4).

When the risk factors of 277 pregnant women who have at least one risk factor were examined; the first factor causing risky pregnancies was caesarean section (37.40%). The rate of pregnant women who stated that they had delivered previously by caesarean section was found to be 51.70%. In another study in which 2649 pregnant women who delivered in a university hospital in the same year were examined, the rate of pregnant women (56.30%) who stated that they had delivered by previous caesarean section was reported to be close to the rate in our study (11).

In the 2017 Statistical Yearbook of the Ministry of Health, it was announced that the country-wide caesarean rate was 53.10% (12). In another study which 57,402 births were examined in our country in 2019; the rate of caesarean section was 42.20% and this rate increased to 66.10% in risky pregnant women (25.10%) followed in perinatology clinic (13).

Caesarean section rate is increasing all over the world. The World Health Organization (WHO) states that the ideal caesarean rate should be between 10.00-15.00%. According to World Health Organization (WHO) data caesarean rates are; 41.30% in Brazil, 37.70% in Korea, 37.40% in Italy, 36.10% in Mexico, 30.20% in the United States, 28.90% in Switzerland, 27.80% in Germany (14). As it has been detected caesarean rates in these countries are considerably higher than the 15.00% caesarean section recommended by the World Health Organization.

Caesarean section is a surgical operation that poses a risk to the health of the mother and baby (15). The fact that caesarean delivery rate is quite common in our country increases the risk of pregnancy by making subsequent pregnancies risky.

In a study examining the causes of caesarean delivery in our country; the most common reason (50.00%) was due to the desire of the physician, then the mother's own request (28.30%), lack of term delivery (9.40%), fear of birth (7.50%), and caesarean section were thought to be healthier (%4.70) (16).

Most women want to give birth by caesarean section to avoid labour pain (17, 18). This

arbitrary procedure is the most important risk factor that increases risky pregnancies with many complications.

In our research, it was found that having four or more pregnancies (30.60%) was the second most common risk factor leading to risky pregnancies. In relation to this, risk factors such as unwanted pregnancy (23.20%) and the duration between the last two pregnancies being less than two years (20.30%) were found to be the most common risk factors in pregnant women. In addition, it was found that the ratio of risky pregnancies increased in proportion to the number of pregnancies and this rate which was 37.80% in first-time pregnant women (primigravida) increased to 80.8% in women with four and more pregnancies. It was also found that the risky pregnancy rate was significantly higher in pregnant women who did not want another child (84.00%) and unwanted pregnancies (81.10%).

In unwanted pregnancies, it is known that negative conditions like abortion, depression, stress, smoking, and drug use are seen at a high rate (19, 20).

It is known that pregnancy interval less than two years cause; anaemia, premature rupture of membranes, endometritis, uterine rupture, foetal growth retardation and abortion (21-23).

Over-fertility is an important public health problem and adversely affects maternal and child health. As more than three births increase risky pregnancies, unwanted pregnancies (23.20%) and birth interval less than 24 months (20.30%) are risk factors for risky pregnancies. These three risk factors are interrelated, and all are indicative of inadequate or improper use of family planning services. Research show that there will be a 30.00-40.00% decrease in maternal and infant mortality rates with risky pregnancies that can be prevented by bringing family planning services to the desired level (1, 9, 24).

In our study, the third risk factor that causes risky pregnancies is that the age of the pregnant woman is inappropriate (over 34 years or under 18 years) (25.90%). Risky pregnancies were found to be the highest in the 35 years and above age group, secondly in the 15-19 age group, and increased gradually after the age of 20 years. In a study conducted in Pakistan in 2017, the rate of pregnancies under the age of 18 was reported to be 14.00% and the proportion of pregnancies over the age of 34 was 18.00% (25).

It is known that if maternal age is over 34 and under 18 it is a risk during pregnancy. Many research show that; advanced maternal age increases complications like, hypertension, gestational diabetes, preeclampsia, malpresentation, placenta adhesion anomalies and bleeding, fetal distress, low or high birth weight, preterm birth, fetal anomaly, intrauterine growth retardation and stillbirth (3, 26-28).

The presence of diseases such as hypertension (7.10%), anaemia (3.40%) and insulin-dependent diabetes (2.20%) in the pregnant women in the study group were also among the top risk factors. In a study on risky pregnancies in our country; there was cardiovascular diseases in 19.30% of pregnant women, hypertension in 13.70%, diabetes mellitus in 17.20%, neurological diseases in 4.60%, urinary tract infection in 9.10% and anaemia (haemoglobin <7 g / dl) in 4.30% (29). In another study in which 2649 pregnant women were examined in the same year with our study, it was reported that 15.50% of pregnant women had at least one chronic disease (11). In a study conducted in Pakistan in 2017 anaemia (37.00%) and hypertension (20.00%) took the first place among the existing diseases detected in pregnant women (25).

Hypertension occurs in 12.00-15.00% of pregnant women. The underlying cause of hypertension is preeclampsia in about 70.00% of pregnant women (30). Preeclampsia and eclampsia, which is seen in 5.00% of developed countries, is responsible for approximately 15.00% of maternal deaths (31-33). The prevalence of hypertension in pregnancy has been reported to be 3.90-15.10% in our country (34).

Anaemia during pregnancy is usually iron deficiency anaemia and its prevalence varies between 12.00-43.00%. Anaemia in pregnancy, causes poor physical and mental performance, decreased immune resistance, fatigue, premature or stillbirths (35).

Chronic and metabolic diseases of the mother constitute important risks for the health of the mother and the baby during pregnancy. Some drugs used for the treatment of these diseases may cause congenital defects by showing teratogenic effect (3).

In our study, smoking, alcohol, or other substance abuse (8.60%) of the pregnant women was in the seventh place among the risk factors. In another study conducted in the same year with our study, the rate of pregnant women who smoked cigarettes (8.90%) was reported to be near to our rate (11). However, there are also studies in which this rate is reported to be higher (17.50-19.00%) (36, 37).

Finally, the risky pregnancies were inversely proportional to the education level of the women and when the education level increases, the risky pregnancy rate decreases significantly and retired women (naturally 35 years and older) were found to be at the highest level of risky pregnancies, the second was found to be higher in the housewives' group than others.

## CONCLUSION

Although pregnancy is a physiological process, 67.70% of the pregnant had at least one risk factor and 27.60% had more than one risk factor.

Risk factors such as having caesarean section, having four or more pregnancies, being 35 and over age, unwanted pregnancy status

and having less than two years between the last two pregnancies were found to be the most common risk factors seen in pregnant women.

Age, education level, number of pregnancies, unwanted pregnancy, unwillingness of another child, and stress in pregnancy were found to be significantly correlated with risky pregnancies.

Because of the high caesarean section rate determined in Turkey is higher than the caesarean birth rates in most of the other countries of the world and the maximum rate of 15% determined by WHO; the first risk factor causing risky pregnancies is to have delivered by caesarean section before. For this reason, we think that urgent review and updating of health policies already implemented to reduce caesarean rate are necessary.

Because risky pregnancies are an important public health problem and most of them are preventable; preconceptional care should be expanded to control the mother and baby before threatening their health.

***Ethics Committee Approval:*** The ethics committee approval dated 30.10.2018 and numbered 2018/8 was obtained from Gümüşhane University Scientific Research and Publication Ethics Committee.

**Peer-review:** Externally peer-reviewed.

***Author Contributions:*** Concept: HU, SŞ, TŞ, PU; Design: HU, SŞ, TŞ, PU; Data Collection and Processing: HU, SŞ, TŞ, PU; Analysis and Interpretation: HU, SŞ, TŞ, PU; Writing: HU, SŞ, TŞ, PU;

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study has received no financial support.

## REFERENCES

1. Price S, Lake M, Breen G, Carson G, Quinn C, & O'Connor T. The spiritual experience of high-risk pregnancy. JOGNN. 2007;36(1): 63-70.
2. World Health Organization, World Health Organization. Reproductive Health, & World Health Organization. Department of Reproductive Health. (2003). Pregnancy, childbirth, postpartum, and newborn care: a guide for essential practice. World Health Organization. Geneva; 2003. p.35-48.
3. World Health Organization. Preconception care: Maximizing the gains for maternal and child health. Geneva; 2013. p.26-37.
4. Hacettepe University Population Studies Institute. 2018 Türkiye Population and Health Survey. Hacettepe University Population Studies Institute, T.R. Presidency Strategy and Budget Directorate and TÜBİTAK, Ankara; 2019. pp. 23-71.
5. Aydemir H, Uyar Hazar H. Aydemir H, Uyar Hazar H. Low risk, risk, and high risk pregnancies and the role of midwives. Gümüşhane University Journal of Health Sciences, 2014; 3(2): 815-833.

6. T.R. Ministry of Health, Turkish Public Health Institution, Department of Women's and Reproductive Health. Prenatal Care Management Guide, Publication No: 924. Ankara; 2014. pp.13-42.
7. Doğan Pekince G, Ertem G. Prenatal period. In: Sevil Ü, Ertem G. editors. Perinatology. 1st ed. Ankara: Nobel Medical Bookstore; 2016. p. 127-68.
8. Baysoy NG, Özkan S. Preconception Care: A Public Health Perspective. Gazi Medical Journal. 2012; 23(3):77-90. doi:10.5152/ gmj.2012.25
9. Aksoy A, & Yılmaz D.V. A New Service Model To Increase Community Health: Preconceptional Care And The Nurse's Role. Journal of Education and Research in Nursing (JERN). 2019; 16(1): 60-67.
10. Tekin Ö.F, Tellioğlu M, Arıkan İ, & Akça M.E. Descriptive characteristics of risky pregnant women followed in a community health center. In 3. International 21. National Public Health Congress, September 2019.
11. Kıssal A, & Kartal B. The Evaluation of Prenatal Care Content of Women Who Gave Birth in A University Hospital. Journal of Health Sciences of Kocaeli University. 2019; 5(1): 35-41.
12. T.R. Ministry of Health General Directorate of Health Information Systems. Health Statistics Yearbook 2017. Ankara; Kuban Printing and Publishing. 2018. pp. 15-47.
13. Kıyak H, Bolluk G, Canaz E, Yüksel S, Gedikbaşı A. The evaluation of cesarean section rates in accordance with Robson Ten-Group Classification System and the data of perinatology (tertiary center). Perinatal Journal. 2019;27(2):89–100.
14. World Health Organization. Global status report on alcohol and health 2018. Geneva; 2019. p.28-47.
15. Souza J.P, Betran A.P, Dumont A, De Mucio B, Gibbs Pickens C.M, Deneux-Tharaux C, et al. A global reference for caesarean section rates (C-Model): a multicountry cross sectional study. BJOG: An International Journal of Obstetrics & Gynaecology. 2016; 123(3):427-36.
16. Karabulutlu Ö. Identifying The Women`s Choice of Delivery Methods of and The Factors That Affect Them. Florence Nightingale Journal of Nursing. 2012; 20(3): 210-218.
17. Duman Z. The opinion of health workers regarding vaginal labor and cesarean section. Afyon Kocatepe University Institute of Health Sciences, Master's thesis. Afyonkarahisar, Türkiye, 2006.
18. Ghaffari S, Dehghanpisheh L, Tavakkoli F, & Mahmoudi H. The effect of spinal and general anesthesia on quality of life in women with cesarean delivery. Cureus. 2018;10(12): e3715

19. McCrory C, McNally S. The effect of pregnancy intention on maternal prenatal behaviours and parent and child health: results of an Irish cohort study. Pediatric and Perinatal Epidemiology. 2013; 27:208–15. http://dx.doi.org/10.1111/ppe.12027.
20. Messer L.C, Dole N, Kaufman J.S, & Savitz D.A. Pregnancy intendedness, maternal psychosocial factors and preterm birth. Maternal and Child Health Journal. 2005; 9:403-12. http://dx.doi.org/10.1007/s10995-005-0021-7.
21. Stanilio DM, DeFranco E, Paré E, Odibo A. O, Peipert J.F, Allsworth J.E, et al. Short interpregnancy interval: Risk of uterine rupture and complications of vaginal birth after cesarean delivery. ObstetGynecol. 2007;110(5):1075-82. doi: 10.1097/01.aog.0000286759.49895.46
22. Conde-Agudelo A, Belizan JM. Maternal morbidity and mortality associated with interpregnancy interval: cross sectional study. BMJ. 2000;321(7271):1255-9. doi: 10.1136/bmj.321.7271.1255
23. Fuentas-Afflick E, Hessol NA. Interpregnancy interval and risk of premature infants. Obstetrics and Gynecology. 2000;95(3):383-90.
24. Karaoğlu L, Çetin F, Ilgar M, Tekiner S, Güneş G, Eğri M, et al. Fertility Characteristics and Contraceptive Use of the Married Women Working at Turgut Özal Medical Center. Journal of Turgut Ozal Medical Center; 12 (2):93–97.
25. Ahsan J, Ayub R, Gul R, Khan U.A, & Zafar U. Assessment of risk factors for high-risk pregnancy. J Med Sci. 2017; 25: (1) 41-44.
26. Hillemeier ML, Weisman CS, Chase G.A, Dyer A.M, & Shaffer M.L. Women's preconceptional health and use of health services: Implications for preconception care. HSR: Health Services Research. 2008;43(1):54-75. doi: 10.1111/j.1475-6773.2007.00741. x.
27. Aynıoğlu Ö. Evaluation of Demographic Variables of Mothers Giving Birth Over 35 Years of Age. Kocatepe Medical Journal. 2014;15(2):152-5.
28. Şekeroğlu M, Baksu A, Ince Z, Gültekin H, Göker N, Özsoy S. Adolescent and old age pregnants obstetric results. The Medical Bulletin of Sisli Etfal Hospital. 2009;43(1):1-7.
29. Turan T, Ceylan S.S, & Teyikçi S. Influencing Factors and Situation of The Mothers To Take Regular Prenatal Care. Fırat Sağlık Hizmetleri Dergisi (Fırat Health Services Journal). 2008; 3(9): 157-172.
30. Oskay Ü. Risky Situations Where Pregnancy Complications Occur and Nursing Approach. Kızılkaya NB, editor. Women's Health and Diseases. Nobel

Medical Bookstore, Istanbul, 2015; 447-472.

31. Shamsi U, Saleem S, & Nishter N. Epidemiology, and risk factors of preeclampsia; an overview of observational studies. Al Ameen J Med Sci. 2013; 6(4):292-300.
32. Turner AJ. Diagnosis and management of preeclampsia: An update. Int J Womens Health. 2010; 2:327-337.
33. Park M, Brewster U. Management of preeclampsia. Hospital Physician. 2007; 11:25-32.
34. Çulha G, Ocaktan M.E, & Çöl M. Hypertension Study in Pregnant Women Demanding Services of Ankara University School of Medicine Obstetrics and Gynecology Department Outpatient Clinic. Türkiye Klinikleri Journal of Medical Sciences 2010; 30(2):639-649.
35. Günalp S., Tuncer S. Gynecology and Obstetrics, Diagnosis and Treatment. Ankara: Pelikan Publications; 2004. p. 29-56.
36. Köse S, Tosun G, Basok B.I., & Altunyurt S. A look at the obstetric outcomes in smoking pregnants through the first trimester screening window. Kocaeli Medical Journal. 2019; 8(1), 51-59.
37. Barut A, Gültekin İ.B, Yılmaz E.A, Sabancı M, Karslı F, Kara O.F, et al. Neurodevelopmental problems of late preterm fetuses and the factors affecting neurological morbidity. Perinatal Journal. 2015; 23(3): 141-147.