European Journal of Interdisciplinary Research and Development
Volume- 45 November- 2025
Website: www.ejird.journalspark.org ISSN (E): 2720-5746

EFFECT OF MATERNAL OBESITY ON THE EFFICACY OF INDUCTION METHODS

Mukhayyo D. Abdurazakova1,
1Senior Lecturer of the Department of Obstetrics and Gynecology, Reproductology, Tashkent State Medical University, Uzbekistan
Email: abdurazakova84@mail.ru
ORCID: https://orcid.org/0000-0001-6783-6070

Marjona U. Abdishukurova 2
2Master's Student of the Department of Obstetrics and Gynecology, Reproductology, Tashkent State Medical University, Uzbekistan
Email: marjonaabdishukurova6@gmail.com
ORCID: https://orcid.org/0009-0005-1463-2038

Abstract

Background: Obese pregnant women have an increased risk of cesarean section, both for natural and induced labor, and postpartum hemorrhage. Newborns of obese women will be large for gestational age. Despite the high prevalence of obesity in pregnant women, the mechanisms of complications, methods of correction and prevention are not sufficiently studied.

Objective: To evaluate the association between obesity and labor induction outcomes.

Material and methods: A prospective study was conducted for the period from 2023 to 2025. We studied 85 pregnant women who 47 with obesity and 38 with normal weight body mass index. Clinical and laboratory examination of pregnant women and fetal assessment was done. In vaginal examination, the degree of cervical maturity was assessed using Bishop scale. In order to assess the fetal condition, ultrasound, Dopplerometry examination were performed. **Methods** of induction were Prostaglandin E2 - intracervical gel with dinoprostone.

Results: According to the results of obesity degree assessment, half of the pregnant women (51.0%) were found to be II degree obese. Only 4 (8.5%) pregnant women had obesity of III degree. The majority of normal weight pregnant women were delivered naturally, 89.4% and with high body mass index 76.5%. The cesarean section was performed on 24.5% and 10.6% of the women in groups I - obese and II - non-obese respectively.

Conclusion: The results of our study show the efficacy of labor induction with dinoprostone in obese women to be 76.4% and 94.7% in laboring women with normal body mass index.

Keywords: Labor induction; obesity, pathogenesis; dinoprostone; efficiency.

Introduction

Overweight and obese women are frequently subjected to induction of labor compared to normal weight women. The increased incidence of pregnancy complications such as pre-

eclampsia, gestational hypertension, intrauterine fetal death and diabetes mellitus in obese women contributes to the increased need for induction of labor [2,5].

Data from the WHO Global Maternal and Perinatal Health Survey, which included 373 facilities from 24 countries and nearly 300,000 births, show that induction of labor is performed in 9.6% of cases. The frequency of induction of labor is lower in African countries (lowest in Niger, 1.4%) than in Asian and Latin American countries (highest in Sri Lanka, 35.5%); in the United Kingdom in 2004- 2005, every fifth birth was induced (19.8%).

In maternity hospitals in Uzbekistan, the frequency of induction of labor according to the operational data of the Republican Perinatal Center varies from 0.5% to 4-5%, in regional perinatal centers the average frequency of induction of labor is 3.9%, perhaps there is an underestimation of the number of obstetric facilities in the statistics [4,5].

Despite the high prevalence of obesity in pregnant women, the mechanisms of complications, methods of correction and prevention are not sufficiently studied. Obese pregnant women have an increased risk of cesarean section, both for natural and induced labor, and postpartum hemorrhage. Newborns of obese women will be large for gestational age [4,10].

The correlation between increased maternal body mass index and higher risk of cesarean section persists even after correction of obesity-related comorbidities. This is explained by the pathogenetic relationship between obesity and labor induction, which may affect the onset of labor. Leptin dysregulation: adipose tissue produces excessive amounts of leptin, which may reduce myometrial contraction and oxytocin signaling. Obesity promotes insulin resistance, which may interfere with the normal course of labor [6]. Obesity creates a pro-inflammatory state that can disrupt the normal inflammatory cascade necessary for labor initiation [1]. Also, the exact mechanism of prematurity in obese women is not fully understood and appears to be multifactorial. Adipose tissue has neuroendocrine functions that produce adipokines and cytokines that may lead to decreased production of labor-initiating hormones and increased risk of developing a preterm pregnancy [5].

Obesity affects placental development and function through increased inflammation in the placenta and altered placental vascular development. Also, lipotoxicity increases oxidative stress affecting the metabolic function of the placenta [1,9,16,17]

High body mass index increases the risk of conditions that themselves require induction of labor: gestational diabetes 3-5 times higher risk in obese women, often leading to macrosomia and the need for induction of labor. Preeclampsia 2-3 times higher risk, often requiring induced labor before spontaneous delivery. However, a recent meta-analysis by Krogh et al compared induction of labor with wait-and-see tactics among obese women and found a lower risk of cesarean section for induction of labor compared with wait-and-see tactics (19.7% vs. 24.5%, relative risk [RR] 0.71, 95% confidence interval [CI] 0.63-0.81) [3,7,15].

Preterm pregnancy, induction of labor and unsatisfactory progress of labor are more common in obese women. The incidence of elective and emergency cesarean section consistently increases with increasing maternal body mass index [8]. Postoperative complications such as postpartum hemorrhage, infectious and thromboembolic complications are also more common in obese women [8].

Currently, maternal obesity is not an indication for induction of labor, but if a high degree of perinatal and maternal risk is detected, labor induction, i.e. programmed delivery, is performed to prevent these complications. According to some studies, programmed delivery is associated with a reduced incidence of caesarean section compared to the wait-and-see approach [1].

OBJECTIVE:

To evaluate the association between obesity and labor induction outcomes.

MATERIAL AND METHODS

In the study we used the data of maternity women from maternity complex №3 in Tashkent city. We conducted a prospective study for the period from 2023 to 2025. We studied 85 pregnant women who were divided into 2 groups: 1-group (main) obese pregnant women (body mass index<30 kg/m2) + induction of labor (n= 47) and 2-group (comparative) with normal weight body mass index (18.5-24.9 kg/m2) + induction of labor (n= 38). Inclusion criteria were body mass index≥30, singleton pregnancy, and absence of diabetes mellitus. Exclusion criteria were: births before 37 weeks of pregnancy, multiple births, breech births, births with uterine scar after cesarean section, absence of anthropometric data (weight and height) in the first trimester of pregnancy.

Body mass index was calculated using the Ketle formula (ratio of weight in kilograms to the square of height in meters) = kg/m², with WHO definition: <18.5 kg/m2 (underweight), 18.5-24.9 kg/m2 (normal weight), 25.0-29.9 kg/m2 (overweight), 30-34.9 kg/m2 (obesity grade I), 35.0-39.9 kg/m2 (obesity grade II), and ≥40 kg/m2 (obesity grade III).

Before induction of labor, clinical and laboratory examination of the pregnant woman and fetal assessment were performed. Vaginal examination assessed the degree of cervical maturity according to the Bishop scale. In order to assess the fetal condition, ultrasound, Dopplerometry were performed before each stage of labor induction. An unfavorable cervix is an indication for induction of labor (≤ 6 score of the Bishop scale). Methods of induction were Prostaglandin E2 - intracervical gel with dinoprostone (3 g of gel corresponds to 0.5 or 1 mg of dinoprostone). The contents of the syringe with the attached catheter are injected into the posterior vaginal arch or intracervically, not reaching the internal pharynx. After the procedure, it is recommended to lie on the back for 10-15 minutes to avoid gel leakage. In case of a negative response to the initial dose, the repeat administration was 6 h from the previous administration. The maximum recommended dose was over a 24 hours period of 2 mg. Types of delivery were vaginal, planned and emergency cesarean section.

We studied maternal outcomes including second and third degree rupture of the birth canal and postpartum hemorrhage. We also examined neonatal outcomes including shoulder dystocia, macrosomia (>4000 g), admission to the neonatal intensive care unit (NICU), and complex neonatal outcome (Apgar score at 5 minutes <5, stillbirth, neonatal death or asphyxia).

RESULTS

The age of the pregnant women ranged from 19 to 40 years (mean 27.3±4.4 years).

Table 1: Analysis of age categories of the examined patients.

Age indicator	Obesity + IR (n=47)		Normal weight + IR (n=38)	
	Abs	%	Abs	%
19-23 years old	7	14,8	8	21,0
24-29 years old	14	29,7*	23	60,5
30-35 years old	21	44,6**	7	18,4
36< years	5	10,6	-	-
Mean age, M±m	29,5±3,3		24,1±2,7	

Note: * - the difference compared to the comparison group is reliable (*-P<0.05; **- P<0.01; ***-P<0.001);

Table 2. Distribution of examined women by body mass index, n = 47

Main group n=47		Grade I obesity (body mass index 30-34.9)	Grade II obesity (body mass index 35-39.9)	Grade III obesity (body mass index 40<)
	Abs	19	24	
	%	40,4%	51,0%	8,5%
	M±m	31,9±1,4	36,9±1,3	41.1± 1.1

According to the results of obesity degree assessment, half of the pregnant women (51.0%) were found to be II degree obese. Only 4 (8.5%) pregnant women had obesity of III degree.

Table 3: Parity analysis of the examined pregnant women (%).

Parity	Obesity + IR (n=47)		Normal weight + IR (n=38)	
	Abs	%	Abs	%
Nulliparous	7	14,8***	21	55,2
Primiparous	21	44,6	13	34,2
Multiparous 3< births	19	40,4***	4	10,5

Note: * - the difference compared to the comparison group is reliable (*-P<0.05; **- P<0.01; ***-P<0.001).

Our study included 7 first-time, 21 repeat and 19 multiparous obese women in group 1. Group 2 included 23, 13 and 11 pregnant women, respectively.

This pregnancy had various complications, predominantly in obese pregnant women (Table 4). Pregnancy nausea and vomiting syndrome was diagnosed 2.6 times and anemia 2 times more often in obese patients than in women with normal body mass index (p≤0.001). Acute respiratory infections occurred with equal frequency in the first and second groups (27.6% and 26.3%).

Table 4: Analysis of the incidence of pregnancy complications

Complications of a real pregnancy	Obesity + IR (n=47)		Normal weight + IR (n=38)	
	Abs	%	abs	%
Nausea and vomiting	23	48,9**	7	18,4
Moderate and severe anemia	12	25,5*	5	13,1
Acute respiratory infections	13	27,6	10	26,3
Threatened abortion and preterm labor	19	40,4*	1	25
Olygohydramnios	6	12,7	5	13,1
Polyhydramnios	9	19,1	4	10,5
Gestational pyelonephritis	10	21,2	6	15,7
Hypertensive disorders	20	42,5***	2	5,2
Gestational hypertension	9	19,1**	2	5,2
Preeclampsia	5	10,6	-	-
Chronic hypertension	6	12,8	-	-
Fetal-placental circulation	25	53,1**	10	26,3
Disorder of the Uterine vessels	11	23,4	6	15,8
Disorder of the Umbilical vessels	14	29,7	4	10,5
Intrauterine growth restriction (IUGR) I Grade	3	6,3	-	-

Note: * - the difference compared to the comparison group is reliable (*-P<0.05; **- P<0.01; ***-P<0.001);

Threat of pregnancy termination was detected 2 times more in pregnant women with normal weight (p<0.05). Hypertensive disorders were observed in 42.5% of pregnant women in the main group, in 5.2% of normal weight women. Gestational pyelonephritis was significantly more common in obese pregnant women (21.2%). Hypertensive disorders were found in 42.5% of cases in the main group, including 9 (19.1%) with gestational hypertension, 5 (10.6%) with preeclampsia (of which 1 case was with severe preeclampsia) and 6 12.8%) with chronic hypertension.

Disorder of the uterine vessels has a high rate in the obese group compared to the normal body mass index group (p<0.001). Disorder of the umbilical vessels was observed in pregnant women 2.0 times more often than in the second group. The frequency of placental dysfunction in the form of premature placental maturation was higher in the observed group than in the normal weight group (9 (19.1%) and 5 (10.5%), respectively. The incidence of intrauterine growth restriction was found in 2 women with high body mass index. In the second group, no cases of IUGR were reported.

Table 5. Indications for induction of labor

Indications for induction	Obesity + IR, n= 47		Normal weight + IR, n=38	
	abs	%	abs	%
Pregnancy at 41±1 weeks of gestation	17	36,1	16	42,1
Premature rupture of membranes	7	14,8	14	36,8
Intrahepatic cholestasis	4	8,5	-	-
Rhesus conflict	-	-	2	5,2
Olygohydramnios	3	6,3	4	10,5
Antenatal fetal death	2	4,2	-	-
Chronic hypertension	3	6,3	-	-
Gestational hypertension	6	12,7	2	5,2
Preeclampsia	5	10,6	-	-

Note: * - the difference compared to the comparison group is reliable (*-P<0.05; **- P<0.01; ***-P<0.001);

Of the 1-group pregnant women, 17 (36.1%) who underwent induction were based on the wait-and-see tactics until 41±1 weeks, 30 (63.8%) women underwent induction of labor for various medical indications. Of the 16 (42.1%) women in group 2 who tended to prolonged pregnancy (41±1 weeks), 22 (57.8%) women underwent induction of labor for medical reasons.

Table 6: Outcomes of labor induction.

Induction results	Obesity + IR, n= 47		Normal weight + IR, n=38	
	abs	%	abs	%
Vaginal labor	36	76,5*	34	89,4
Emergency cesarean section	5	10,6*	2	5,2
Planned cesarean section	6	12,7**	2	5,2
Protracted second phase of the labor	5	10,6*	2	5,2
Second-degree of the perineal tear	6	12,7	4	10,5
Shoulder dystocia	2	4,2	-	-
Birth with fetal hypotrophy	2	4,2	-	-
Fetal macrosomia	5	10,6**	1	2,6
Cephalopelvic disproportion	3	6,3		
Fetal distress	2	4,2*	1	2,6
Postpartum hemorrhage	3	6,3	-	-

Note: * - the difference compared to the comparison group is reliable (*- P<0.05; **-P<0.01; ***-P<0.001);

Table 7. Analysis of the condition of newborns, n=83

Indicators	Obesity + IR, n= 45		Normal weight+ DI, n=38	
	abs.	%	abs.	%
Healthy children	36	80,0*	36	94,7
Mild asphyxia	5	11,1*	2	5,2
Moderate asphyxia	3	6,6***	-	-
Severe asphyxia	1	2,2***	-	-

Note: * - the difference compared to the comparison group is reliable (*-P<0.05; **- P<0.01; ***-P<0.001);

We studied the condition of 45 children during the study. We excluded 2 antenatal fetal deaths. In group I the number of children born with mild asphyxia was 11.1%, whereas in group II there were 2 times more children born with 6-7 points. Children with moderate asphyxia were born only to obese women - 6.6%. One child with severe asphyxia was registered in the group with high body mass index.

DISCUSSION

The mean age of the study subjects is 29.5±3.3 years in obese pregnant women, 24.1±2.7 years in the comparison group. Our study revealed that 45% of pregnant women are obese at 30-35 years of age. This corresponds in most of the cases on repeated and multiparous women. This replicates the findings of study [9,18,19]. According to their findings, repeat-pregnant women are twice as likely be obese. Age less than 20 and older than 35 years is associated with an increased risk of CS after induction of labor [4].

Analysis of the degree of obesity shows that in most cases (51.0%) pregnant women with obesity of II degree are subjected to induction. The low incidence of 4 (8.5%) degree III of obesity is explained by the fact that it has many additional somatic diseases and their complications, which in many cases is in itself an indication for surgical delivery. To ensure the success of labor induction, it is recommended to consider high body mass index (body mass index) (>30 kg/m2) and/or excessive weight gain during pregnancy (> 20 kg) as a risk factor for cesarean section [4].

The study of pregnancy parity showed that in group 1 the number of first pregnancies was 3.7 times less than in the comparison group (P<0.01). This is quite understandable as obesity is more likely to develop in repeat pregnancies. The proportion of women in group 1 with obesity who had multiple births was 4 times higher than in group 2. Such a high frequency of multiple births among obese group 1 compared to group 2 requires further study of the peculiarities of the course of pregnancy.

Taking into account that the number of pregnancies in the anamnesis is a risk factor for high body mass index, we analyzed the ratio of the frequency of third, fourth, and 5th pregnancies. Thus, there were significantly more women with third pregnancies in group 1 compared to group 2 (p< 0.05). Total women with history of more than four pregnancies were 19.1% in

group 1, while in group 2 were not observed at the time of examination. We did not take 6 deliveries, because according to the national protocol, multiple births (6 or more premature pregnancies in the history) is a contraindication to the use of dinoprostone (induction of labor) [4,12,13,14].

Existing obesity in the mother before pregnancy may be a risk factor for abnormal course of pregnancy and increased risk of obstetric and perinatal complications. Nausea and vomiting syndrome of moderate to severe pregnancy was observed 2.6 times (more often in obese patients than in non-obese pregnant women. The threat of spontaneous miscarriage and preterm labor compared to normal weight women was more recorded in obese pregnant women.

The difference in the incidence of low birth weight between the high and normal body mass index groups is 6%, which is more common in women with normal body mass index. This is explained by the high incidence of body mass index in this group. On the contrary, polyuria was more observed in obese pregnant women ($p<0.05$). Disorder of the Uterine vessels has a high rate in obese group compared to the comparison group ($p<0.05$). Disorder of the umbilical vessels was observed in pregnant women with high body mass index almost 3 times more frequently than in the comparison group, respectively ($p<0.01$). The frequency of placental dysfunction, fetal growth restriction syndrome and fetal hypertrophy on the background of blood flow disturbance in the observed group was higher than in the comparison group with normal weight ($p<0.001$).

When analyzing the indications for induction of labor in both groups, the tendency to prolonged pregnancy is high, because the expectation management was chosen. The incidence of premature rupture of membranes was higher in normal weight women than in obese pregnant women and the difference between them was significant ($p<0.05$). Intrahepatic cholestasis was noted only in women with high body mass index, whereas Rh conflict was noted in the group without obesity. Also, in group 1, such pregnancy complications as antenatal fetal death, chronic arterial hypertension, and preeclampsia were detected. This is explained by the consideration of obesity as a risk factor for hypertensive conditions and their complications.

Evaluation of outcomes in women who underwent induction of labor showed that obesity affects not only the course of pregnancy, but also the development and course of labor. This is clearly evidenced by the fact that vaginal labor was observed in 76.5% of the main group, i.e. induction of labor was completed operatively in 1/4 (24.5%) of cases. At the same time, this indicator was 1/10 (10.6%) in women with normal weight. A comparative analysis was performed to characterize the course of labor in pregnant women with normal body weight and obesity. It was shown that the gestational age at the time of delivery was comparable in all groups. Statistically significant differences in the number of cases of emergency abdominal delivery in labor are noteworthy. The main indications for cesarean section were fetal distress, cephalopelvic disproportion, and protracted second phase of the labor not amenable to medical correction. This rate was highest in group 1, amounting to 21.1%. In group 2, the rate reached 5.2%.

In normal-weight women, complications such as shoulder dystocia, hypotrophic fetus, cephalopelvic disproportion, and postpartum hemorrhage were not observed at all. Birth with fetal hypotrophy, protracted second phase of the labor, undetected fetal macrosomia before

induction were respectively 2, 3 and 3 times more common in high birth weight women compared to normal weight women respectively ($p<0.05$, $p<0.01$, $p<0.01$).

The condition of the newborns was assessed according to the Apgar scale. Almost all newborns in the comparison group were born with a score of 7-8 and higher. In the main group, the occurrence of moderate and severe asphyxia was associated with pathologic conditions that were indications for emergency cesarean section.

CONCLUSION

The results of our study show the effectiveness of labor induction with dinoprostone in obese women by 76.5% and 89.4% in women with normal body mass index. Also, obesity during pregnancy increases the risk of pre- eclampsia and threat of premature termination of pregnancy at different gestational ages. Pregnant women with increased body weight are at high risk for the development of labor anomalies and an increased rate of emergency abdominal delivery. Newborns from obese mothers are at high risk of developing complications in the early neonatal period.

ACKNOWLEDGMENTS

The authors express their gratitude to colleagues for their support in conducting this study.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

1. Babadjanova G. S. et al. Peculiarities of the Pregnancy in Women with Hepatobiliary System Pathology //Indian Journal of Forensic Medicine & Toxicology. – 2020. – Т. 14. – №. 4.
2. Carlhäll S, Källén K, Blomberg M. The effect of maternal body mass index on duration of induced labor. Acta Obstet Gynecol Scand. 2020 May;99(5):669-678. doi: 10.1111/aogs.13795. Epub 2020 Jan 23. PMID: 31883372.
3. Coates D, Makris A, Catling C, Henry A, Scarf V, Watts N, et al. (2020) A systematic scoping review of clinical indications for induction of labour. PLoS ONE 15(1): e0228196. https://doi.org/10.1371/journal.pone.0228196
4. Collection of National Clinical Protocols on Obstetrics// Tashkent 2024, 307-356 pp.
5. Croll DMR, De Vaan MDT, Moes SL, et al. Methods of induction of labor in women with obesity: A secondary analysis of two multicenter randomized controlled trials. Acta Obstet Gynecol Scand. 2024;103:470-478. doi:10.1111/aogs.14737 Collection of National Clinical Protocols on Obstetrics// Tashkent 2024, 307-356 pp.
6. Dalbye R, Gunnes N, Blix E, et al. Maternal body mass index and risk of obstetric, maternal and neonatal outcomes: a cohort study of nulliparous women with spontaneous onset of labor. Acta Obstet Gynecol Scand. 2021;100:521-530.
7. Das S., Mirzaeva D. B. Diagnostic and prognostic value of Platelet Indices as a potential biomarker in Preeclampsia: A Case-Control Study in a maternity hospital at Tashkent. – 2025.

8. Krogh LQ, Glavind J, Henriksen TB, Thornton J, Fuglsang J, Boie S.Full-term induction of labor vs expectant management and cesarean delivery in women with obesity; systematic review and meta-analysis. Am J Obstet Gynecol MFM. 2023;5:100909.
9. Nonmedically indicated induction in morbidly obese women is not associated with an increased risk of cesarean delivery Kawakita, Tetsuya et al. American Journal of Obstetrics & Gynecology, Volume 217, Issue 4, 451.
10. Palmer B, Clegg J. The sexual dimorphism of obesity. Mol Cell Endocrinol. 2015;15(402):113-9. doi:10.1016/j.mce.2014.11.029.
11. Santos S, Voerman E, Amiano P, et al. Impact of maternal body mass index and gestational weight gain on pregnancy complications: an individual participant data meta-analysis of European, North American and Australian cohorts. BJOG. 2019;126:984-995.
12. Viteri OA, Tabsh KK, Alrais MA, et al. Transcervical Foley balloon plus vaginal misoprostol vs vaginal misoprostol alone for cervical ripening in nulliparous obese women: a multicenter, randomized, comparative-effectiveness trial. Am J Perinatol. 2021;38:e123-e128.
13. Babadjanova G. S., Tilavova G. Y., Abdurazakova M. D. CERVICAL INSUFFICIENCY: CAUSES, PRINCIPLES OF DIAGNOSIS AND TREATMENT //JOURNAL OF EDUCATION AND SCIENTIFIC MEDICINE. – 2025. – №. 5.
14. Abdurazakova M. D., Abdishukurova M. U. EVALUATION OF THE EFFECTIVENESS OF LABOR INDUCTION IN OBESE WOMEN //JOURNAL OF EDUCATION AND SCIENTIFIC MEDICINE. – 2025. – №. 5.
15. Razzakova N., Das S. PREDICTIVE MODEL FOR HYPERTENSIVE DISORDERS IN PREGNANCY: A CROSS-SECTIONAL STUDY FROM A MATERNAL HOSPITAL, TASHKENT //Web of Medicine: Journal of Medicine, Practice and Nursing. – 2025. – Т. 3. – №. 5. – С. 116-121.
16. Yakubova G. K., Mirzaeva D. B. FEATURES OF THE COURSE OF PREGNANCY IN WOMEN WITH FETOPLACENTAL INSUFFICIENCY //JOURNAL OF EDUCATION AND SCIENTIFIC MEDICINE. – 2025. – №. 5.
17. Das S., Mirzaeva D. PREVALENCE AND HEMATOLOGICAL PROFILES OF PREGNANCY ANEMIA: EXTENDED CROSS-SECTIONAL ANALYSIS IN A TERTIARY CARE CENTER IN TASHKENT //Web of Medicine: Journal of Medicine, Practice and Nursing. – 2025. – Т. 3. – №. 5. – С. 146-150.
18. Abdurazakova M. D., Abduraxmanova G. A. INFLUENCE OF MATERNAL THYROID DYSFUNCTION ON PRETERM BIRTH //JOURNAL OF EDUCATION AND SCIENTIFIC MEDICINE. – 2025. – №. 5.
19. Razzakova N., Qosimova H. RESTORATION OF FERTILITY AFTER SURGERY TO REMOVE UTERINE FIBROIDS IN PATIENTS OF THE OLDER REPRODUCTIVE GROUP //Современные подходы и новые исследования в современной науке. – 2025. – Т. 4. – №. 4. – С. 5-6.