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WHEN WEIGHT DETERMINES CHILDBIRTH CHOICES: A DESCRIPTIVE STUDY OF OBESE PREGNANT WOMEN AT REGIONAL HOSPITAL DR. H. ABDUL MOELOEK OF LAMPUNG

SAAT BERAT BADAN MENENTUKAN PILIHAN PERSALINAN: STUDI DESKRIPTIF PADA IBU HAMIL OBESITAS DI RUMAH SAKIT UMUM DAERAH DR. H. ABDUL MOELOEK LAMPUNG

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Abstract

Obesity in mothers is a major worldwide health issue that significantly raises the need for obstetric procedures, especially cesarean sections. Numerous difficulties for both mothers and newborns have been linked to elevated pre-pregnancy and gestational body mass indexes (BMI). The purpose of this study is to characterize the distribution of delivery methods among pregnant women who are obese at Dr. H. Abdul Moeloek Regional Hospital in Lampung Province, Indonesia. Total sampling was used to perform a quantitative, descriptive retrospective analysis. 58 pregnant women with a BMI of 30 kg/m² or above who gave birth between 2017 and 2023 were included. SPSS version 27.0 was utilized for data analysis. Findings out of the 58 instances that could be analyzed, 69.0% of obese pregnant women gave delivery via cesarean section, 27.6% gave birth spontaneous vaginally, and 3.4% had a vacuum induction. The majority (31.0%) were between the ages of 35 and 39, and 77.6% were multiparous. The type of delivery was found to be strongly influenced by maternal age, parity, and obesity. Being obese greatly raises the risk of having a cesarean section, especially for older and multiparous women. Reducing needless cesarean rates and improving mother and newborn outcomes may be possible with early treatments such as lifestyle modification education, prenatal counseling, and BMI-based risk assessment.

Keywords : Body Mass Index (BMI), delivery methods, maternal age, obesity, parity, pregnancy

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Abstrak

Obesitas pada ibu merupakan masalah kesehatan global yang signifikan secara substansial meningkatkan kebutuhan akan prosedur obstetri, terutama operasi caesar. Indeks Massa Tubuh (IMT) yang tinggi sebelum dan selama kehamilan telah dikaitkan dengan berbagai komplikasi baik pada ibu maupun bayi. Tujuan dari penelitian ini adalah untuk menggambarkan distribusi metode persalinan pada ibu hamil dengan obesitas di Rumah Sakit Umum Daerah Dr. H. Abdul Moeloek, Provinsi Lampung, Indonesia. Penelitian ini menggunakan pendekatan kuantitatif dengan desain deskriptif retrospektif dengan teknik total sampling. Sebanyak 58 ibu hamil dengan IMT ≥30 kg/m² yang melahirkan antara tahun 2017 hingga 2023 diikutsertakan dalam studi ini. Analisis data dilakukan menggunakan SPSS versi 27.0. Dari 58 data yang dianalisis, diketahui bahwa 69,0% ibu hamil obesitas melahirkan melalui operasi caesar, 27,6% melahirkan secara spontan pervaginam, dan 3,4% melalui induksi vakum. Mayoritas responden (31,0%) berusia antara 35–39 tahun, dan 77,6% merupakan multipara. Jenis persalinan sangat dipengaruhi oleh usia ibu, paritas, dan obesitas. Obesitas secara signifikan meningkatkan risiko persalinan dengan operasi caesar, terutama pada wanita yang lebih tua dan multipara. Pencegahan melalui edukasi modifikasi gaya hidup, konseling prenatal, serta penilaian risiko berbasis IMT dapat membantu menurunkan angka operasi caesar yang tidak perlu dan meningkatkan luaran kesehatan ibu dan bayi.

Kata Kunci : Indeks Massa Tubuh (IMT), kehamilan, metode persalinan, obesitas, paritas, usia ibu

1. INTRODUCTION

Obesity is a major global health issue that disproportionately affects women (Jaacks et al., 2019). One of the issues that is presently spreading around the world, including in Indonesia, is obesity. In the United States, obesity has risen 42.4% between 2017 and 2018 (Hales et al., 2020). According to Dewi et al. (2023), Australia has the highest rate of gestational diabetes mellitus (GMD) at 30%, with a body mass index (BMI) of greater than 25 kg/m2 being one of the average risks. From 2013 to 2018, Indonesia's obesity rate rose from 14.8% to 21.8%. In Indonesia, 28% of adults suffer from central obesity, and 23.1% of adults suffer from obesity. These illnesses increase a person's risk of hypertension and diabetes.

The World Health Organization and the National Academy of Medicine (NAM) advise gestational weight recommendations for weight gain (GWG) based on pre-pregnancy body mass index (BMI). These guidelines are intended to reduce the hazards of either too much or too little GWG in order to support the mother's and the baby's health (Martínez-Hortelano et al., 2020). Numerous clinical and nonclinical factors linked to cesarean delivery, such as pre-pregnancy BMI and prepregnancy health conditions, as well as maternal age, race, socioeconomic level, and insurance coverage are difficult to change (Leonard et al., 2019; Fresch et al., 2024).

Preventing maternal overweight and obesity can be achieved by optimizing weight growth throughout pregnancy, according to the American College of Obstetricians and Gynecologists (Sagi-Dain, 2021). Overweight was defined by a BMI of 25–29.9 kg/m2, while obesity was defined by a BMI of 30 kg/m2. The last weight recorded prior to delivery less the self-reported prepregnancy weight (kg) is how we determined pregnancy weight gain. In the event that delivery weight was unavailable, we used the weight that was last measured four

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weeks before to birth. The interval between the last recorded weight and delivery was one (3) days, which is the median (interquartile range). Since preeclampsia and gestational diabetes can independently affect pregnancy weight gain, we used the last weight recorded for those with these conditions (16–20 weeks prior to diagnosis) instead of the final week at birth (IOM, 2009). The Institute of Medicine's (IOM) 2009 standards for weight increase during pregnancy are recommended to be followed, with total weight gains at term of 6.8–11.3 kg and 5.0–9.1 kg for those who were overweight or obese before to pregnancy, respectively. To lower overall risk, these recommendations sought to balance the risks of both high and low weight increase.

Women who are obese are more likely to give birth later than women of normal weight, which increases their risk of interventions like labor induction and cesarean delivery. Obesity is also linked to poor labor and delivery outcomes (Ellis et al., 2019; Dalbye et al., 2021). According to a review published in 2019, women who were obese needed larger dosages of oxytocin than women who were average weight. Every BMI category increase dramatically raises the requirement for oxytocin to induce delivery (Ellis et al., 2019).

Cesarean section (CS) delivery can reduce both maternal and neonatal morbidity and mortality when conducted for appropriate medical indications, it can have long-term negative consequences for the mother and the infant when performed unnecessarily (Antoine et al., 2020). Early maternal problems such transfusion-related bleeding, serious infection, shock, uterine rupture, placenta previa, hysterectomy, and issues in later pregnancies are all associated with cesarean birth. According to epidemiologic research, cesarean birth has been linked to higher rates of noncommunicable disorders in newborns, including obesity, food allergies, and asthma (Angolile et al., 2023).

Furthermore, the range of bacteria linked to vaginal birth that are advantageous for the immune system's development are not present in infants born via cesarean delivery (Coelho et al., 2021). The Alliance for Innovation on Maternal Health, the American College of Obstetricians and Gynecologists (ACOG), and the Centers for Disease Control and Prevention Healthy People 2030 have set a national objective to lower the rate of cesarean deliveries (CDC, 2024; ACOG & AIM, 2024).

According to the description given above, it is critical that studies link two obesity-related phenomena to the prevalence of caesarean delivery, specifically. In order for it to benefit women of childbearing age participating in pregnancy programs and pregnant mothers, it can help expand knowledge and understanding about care services, particularly in relation to body mass index, which aims to lower the prevalence of pregnancy obesity and, hopefully, lower the need for caesarean deliveries in the future. This study's objective was to determine the delivery type's description prevalence.

2. RESEARCH METHOD

Researchers used a retrospective study design to look into the birth outcomes of obese pregnant women who gave birth and were diagnosed by a medical professional from the Medical Record Installation of Regional Hospital Dr. H. Abdul Moeloek of Lampung, Indonesia, over a seven-year period (2017–2023). This descriptive study focused on obese pregnant women (BMI ≥30 kg/m2). There are 58 samples using the total sampling method. This research was investigated using an analyzed descriptives test. The specialized Statistical Package for the Social Sciences (SPSS) version 27.0 was utilized to conduct data analysis.

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Permissions were officially obtained from the appropriate authorities in the study setting. The Health Research Ethics Committee of Regional Hospital Dr. H. Abdul Moeloek of Lampung, the institutional review board, granted ethical approval, with approval number 297/KEPK-RSUDAM/VII/2024. To protect the privacy of all patient data, strict adherence to hospital procedures and research ethics was maintained. Obtaining individual consent from participants was not practicable due to the retrospective nature of the data gathering process used in this study. Thus, the Health Research Ethics Committee of Regional Hospital Dr. H. Abdul Moeloek of Lampung approved the use of deidentified data with a waiver of consent. To maintain confidentiality and privacy, all of the data examined in this study was anonymized.

3. RESULTS AND DISCUSSION

The researcher presents the findings from the study in this chapter. The test's outcome can be observed as follows:

Table 1. Data of the impact Obesity in Pregnant Women on Delivery Methods

Variables	N (58)	%
Mother's Age		
<20	0	0.0
20-24	3	5.2
25-29	13	22.4
30-34	12	20.7
35-39	18	31.0
≥40	12	20.7
Parity		
Nulliparous	13	22.4
Multiparous	45	77.6
Delivery Methods		
Spontaneous	16	27.6
Cesarean	40	69.0
Vacuum	2	3.4

According to data in Table 1, the age group of 35–39 years old accounted for 31.0% of the pregnant women in this study. The majority of respondents were middle-aged and older pregnant women, which may be linked to certain obstetric hazards, such as higher rates of caesarean section deliveries.

Obesity has become a significant risk factor during pregnancy and has become increasingly prevalent in young people and women of reproductive age (WHO, 2022; Cochrane et al., 2019). According to WHO projections, 20% of the 167 million adults and children who will be overweight or obese by 2025 will be female (WHO, 2022; CDC, 2021). Regarding Turkey, 30% of women between the ages of 15 and 49 were obese in 2018, per the Turkish Demographic and Health Survey (TDHS) data. Furthermore, 24.8% of women were obese in 2020, according to data from the Türkiye Statistical Institute (TNSA, 2018; TÜİK, 2019). The issue of obesity is known to have detrimental impacts on everyone's health, but especially on

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women who are fertile. Women of reproductive age are more at risk for weight gain during pregnancy (Ogunwole et al., 2021). Pregnant women who already suffer from obesity or who gain a lot of weight during pregnancy face major challenges during the pregnancy, delivery, and postpartum phases (Vitner et al., 2019). According to the CDC data, between 2016 and 2019, the number of American women with pre-pregnancy obesity rose as their ages grew. Obesity rates among women aged 20 to 29 rose from 27.2% in 2016 to 30.4% in 2019, among women aged 30 to 39 from 25.8% to 28.3%, and among women aged 40 and above from 28 to 30.4% (CDC, 2021).

Brenes-Monge et al. (2019) state that women of reproductive age who are obese or overweight may have a higher risk of caesarean delivery. In the United States, the prevalence of obesity among women of reproductive age rose by almost 30% over the previous ten years (Driscoll et al., 2020). Obesity is more likely to affect older and multiparous women (Onubi et al., 2015).

According to data in Table 1, mothers who became pregnant for the first time, or nullipara, made up only 22.4%. Most pregnant women were multipara, meaning they had already given birth (77.6%). Most of the mothers had several pregnancies and may have had a history of obstetric complications, including medical grounds for cesarean sections.

A recent American study by Rogers et al. (2018) examined the impact of cesarean sections on the BMI of different types of women. The study found that women who were nulliparous (never gave birth), multiparous (never had a caesarean section), and multiparous (had had a caesarean section before) had higher BMIs. It was discovered that the chance of a higher BMI following a cesarean section was 5% for nulliparous women, 5% for multiparous women who had never had one, and 2% for multiparous women who had. BMI rose by 1 kg/m2 for each group. The ability of these studies to assess data on cesarean delivery varies, nevertheless, depending on factors including whether they use willing participants or a series of medical course indicators, such as incomplete treatment or unsettling fetal heart rate monitoring. According to Brenes-Monge et al. (2019), multiparous women with obesity had a significant and independent correlation with cesarean delivery when compared to multiparous women with normal BMI (obesity aOR: 1.60; 95% CI [1.21–2.12]). In Mexico, obese multiparous women are more likely to have cesarean sections than those with a normal body mass index.

Studies have shown multiparity as one of the causes of weight gain in women of reproductive age. In most of such studies, a positive association between parity and weight gain or BMI has been reported. Parity was positively associated with long-term obesity risk among Chinese women (Li et al., 2016). A positive correlation was also observed between numbers of deliveries and obesity in Iranian women. In particular, it was shown that high parity was associated with BMI (Hajiahmadi et al., 2015). In this case, it can be stated that multiparous women have a higher risk of obesity.

According to data in Table 1, the majority of pregnant women who were obese had a caesarean section (69.0%), a normal or spontaneous birth (27.6%), and a vacuum-assisted delivery (3.4%). Very high rates of cesarean sections were common. This could be linked to risk factors like maternal age and the potential for obstetric problems in pregnancies with obese women. These findings corroborate the research showing that obesity raises the risk of medical interventions during childbirth.

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Planning for birth and managing a woman's continuing care once she reaches term pregnancy (37 weeks gestation) can be done in one of three ways: either wait for spontaneous labor to begin, induce labor, or have a cesarean section before labor starts (Maxwell et al., 2019). The goal of spontaneous labor is to let the vaginal delivery occur naturally without the need for medical assistance. The process of artificially inducing uterine contractions to achieve a vaginal delivery is known as induction of labor, and non-labor cesarean section (NLCS) is an elective cesarean section that is planned before the pregnant woman enters labor. Fetal position, numerous gestations, prior cesarean sections, and maternal request are common causes of NLCS (Alsayegh et al., 2018). One of these three alternatives may be used by women and healthcare professionals to plan for delivery; however, the actual delivery method, such as an emergency cesarean section or spontaneous vaginal birth, may deviate from the initial plan. There is still uncertainty regarding the best delivery strategy for women who are obese at term gestation, and a number of issues frequently come up (Tzadikevitch-Geffen et al., 2021; Walędziak et al., 2022).

According to the USA study, which examined over 2.2 million births from 38 states in 2012, one in five mothers are obese, and even after adjusting for a number of medical and demographic risk factors, low-risk women who would otherwise be likely candidates for a vaginal birth had a consistently higher chance of having a primary cesarean delivery across all BMI categories. There is a higher correlation with unintended cesarean birth and an overall rise in the risk of cesarean delivery with rising BMI (DeClercq et al., 2015; Cheney et al., 2018). Obese women are more likely to experience postpartum hemorrhage and a cesarean section, both in cases of spontaneous labor and induction of labor. Obese women are more likely to have large-for-gestational-age babies (Santos et al., 2019; Ellis et al., 2019; Ruhstaller, 2015; Lassiter et al., 2016; Dalbye et al., 2021). However, a recent meta-analysis by Krogh et al. compared expectant management and induction of labor among obese women and discovered that the former had a lower risk of cesarean section (19.7% vs. 24.5%, relative risk [RR] 0.71, 95% confidence interval [CI] 0.63–0.81) (Krogh et al., 2023).

4. CONCLUSION

Although many nonclinical factors (eg, mother’s age, race, socioeconomic status, insurance coverage, etc) and clinical factors (prepregnancy BMI, prepregnancy health conditions, etc) associated with cesarean section are difficult to modify, our findings suggest that weight gain during pregnancy may be a major risk factor that may increase the need for cesarean section. As BMI rises, the probability of cesarean delivery rises as well, probably more so for emergency caesarean sections. Therefore, it's critical to implement preventative measures like lifestyle changes, bariatric surgery in extreme situations, healthy food and exercise, and prenatal counseling about the negative effects of obesity during pregnancy. Obesity-based risk classification of expectant patients may also aid obstetricians in improving patient outcomes and clinical judgment. In addition to improving the mother's health, promoting weight loss initiatives across the nation would significantly reduce the CS rate and medical expenses.

It is necessary to take into the limitations of this research. First, this study was retrospective in nature, and the information was gathered via an electronic database. This implies that the practitioner's constant entry of the data into the database at the time of delivery

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was necessary to ensure the final data's accuracy. Second, the obstetric database that was utilized did not require the weight growth throughout pregnancy, hence this information was absent.

It is advised that future research employ a prospective design to track weight increase directly during pregnancy in order to gather more precise information about the delivery method, particularly the risk of cesarean section. Furthermore, to evaluate how clinical and non-clinical factors interact to affect delivery decisions, multivariate analysis is required. It's also critical to do experimental research on the efficacy of lifestyle interventions like nutrition education and counseling. Qualitative study can investigate how mothers and healthcare professionals perceive pregnancy obesity and delivery options to supplement the quantitative approach. Lastly, to enhance clinical decision-making and delivery outcomes, an assessment of the application of Body Mass Index (BMI)-based obstetric risk classification in health facilities must be carried out.

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