

# CHAPTER 1

## ADOLESCENT PREGNANCY AND SYRIAN REFUGEES

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### INTRODUCTION

The birth rate among Turkish adolescents and young adults (ages 15–19) fell to 17 births per 1,000 women in 2019. Despite this, Turkey still has a higher rate of adolescent pregnancy than the rest of the developed world and most of Europe. Ethnic variations, educational levels, traditions, and customs, as well as the forced movement of Syrian refugees into our nation, all contribute to the high occurrence of adolescent pregnancy. Adolescent pregnancies are an important problem considering their health and social consequences. The significant increase in cesarean section rates associated with preterm birth, low birth weight, preeclampsia, cephalopelvic disproportion (CPD), and acute fetal distress (AFD) in adolescent pregnancies indicates that these pregnant women face an increased risk of maternal and perinatal morbidity and mortality. Research and projects should be carried out to identify and solve the reproductive health problems of adolescence, and solution proposals should be developed under these results. National health policies should be in place to deal with adolescent pregnancies and their negative effects.

### ADOLESCENT PREGNANCY RATES IN TURKEY AND IN THE WORLD

Adolescence is defined as a period between the ages of ten and nineteen, whereas youth is defined as a period between the ages of fifteen and twenty-four (1). When a young girl becomes pregnant, her fate changes dramatically, both in the early and long term. As her health is in danger, her education, academic success, and employment prospects decrease. She becomes more vulnerable to

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poverty and social exclusion. If adolescents become pregnant before they are ready for pregnancy, they lose their right to a healthy and successful adulthood (2). Adolescent girls who complete their education and training are less likely to become pregnant. Education raises adolescent girls' financial freedom, self-esteem, and social status in their future lives. It allows them to have more say in their decisions about their future. As their education level increases, they decrease the possibility of early marriage and delay their possible pregnancies, giving them the chance to have a healthier birth in the future (2).

12 million of these pregnancies between the ages of 15 and 19 result in birth (3). Turkey, along with eight other European Union member countries, had a teenage fertility rate of 17‰ in 2019, which was higher than the European Union average (4). The fertility rate in the age group of 15-19 years in Turkey has decreased from 49‰ in 2001 to 15‰ in 2020 (4). Bulgaria had the highest adolescent fertility rate of 39‰, while the Netherlands and Denmark had the lowest adolescent fertility rate of 2‰ when comparing the adolescent fertility rates of the European Union's twenty-seven member countries in 2019 (5). The birth rate among adolescent girls in the United States declined steadily between 1991 and 2005. Between 2007 and 2019, it fell to an all-time low. In 2019, the birth rates for females aged 10 to 14 and 15 to 19 were 0.2 and 16.7 per 1000, respectively (6). The predicted overall adolescent pregnancy rate has dropped by 12% over the previous 20 years. However, there are enormous variations between rates in different regions. For instance, the teenage fertility rate in East Asia is 7.1‰, but it is 129.5‰ in Central Africa (7). In 2019, Niger had Africa's highest rate of adolescent fertility (8). The country had 180 births per 1,000 women aged 15 to 19 (8, 9). Mali was the runner-up, with 164 births per 1,000 women of childbearing age (8). In the same year, Sub-Saharan Africa's average adolescent fertility rate was 99.5 (8). Across all age groups, the African continent maintains persistently high fertility rates. Adolescent pregnancies are common and affected by early marriages (8). However, adolescent fertility rates are lower in North African countries. As of 2019, Egypt's adolescent fertility rate for ages 15 to 19 is estimated at 52 births per 1000 women. Since 2012, the indicator has entered a downward trend. Overall, Egypt's adolescent fertility rate declined between 2000 and 2007, then gradually increased until 2012. There were 55.8 births per 1000 young people, which was the highest level (10). Tunisia had a rate of 7.9 births per 1,000 young women in 2020, while Libya had a rate of 5.7 (8). In 2020, the Caribbean and Latin America's pregnant adolescent women aged 15 to 19 had a birth rate of 60.5‰ (9). Nicaragua and Guatemala had the greatest proportion of adolescents in 2018, with a birth rate of 75‰ or greater (11). Chile and Uruguay had the lowest adolescent birth rates in South America, while Mozambique had the highest adolescent birth rate in the world at 180 per 1000 women (12, 13).

## **SYRIAN REFUGEE MIGRATION AND ITS CONTRIBUTION TO ADOLESCENT PREGNANCY RATES**

In 2011, the Syrian Arab Republic's internal strife drove millions of people to flee to neighboring nations. As of September 2020, 6.7 million civilians migrated to Turkey, Lebanon, and Jordan for safe living conditions (14). Turkey has the highest Syrian refugee population, according to the UNHCR (United Nations High Commissioner for Refugees) Turkey information sheet, with 3.6 million refugees as of 2020 (15, 16). The illiteracy rate in Turkey is 3-4%, 1% for men and 6% for women. The 2019 Syria Barometer survey on the education level of Syrian households shows that 8% of Syrians are illiterate and 17% have not completed primary school (17). The reason for this may be that Syrians coming to Turkey are from the northern rural areas of Syria and from regions where access to education has been limited for years. Another factor could be the fact that 700,000 Syrians who left Turkey between 2014 and 2016 have a higher level of education than those who stayed (18). Young girls with a higher education level and continuing their academic education are less likely to become pregnant. School life prepares young people to work and earn a living and raises their self-confidence and status in society. Education and training also delay child marriages and extramarital pregnancies, leading to healthy births (2).

According to statistics, after the refugee migration, the number of Syrian refugees born in Turkey between 2011-2019 has exceeded 450,000 (19). In 2019, the annual number of births of Syrian refugees increased to 170,000. This situation makes maternal health and access to health services even more important (18, 19). According to July 2020 data, the number of young Syrian girls aged 10-19 in Turkey is 319,491 (20). It should not be overlooked how great the potential risk of pregnancy can be among adolescents in this group with low educational and socio-cultural levels.

According to 2018 data (21), Syrian refugees in Turkey have a lower average age than the general population. While the average age of the Turkish population is 31.7, it is 22.54 for Syrian refugees. When we examine the ratio of young individuals aged 15 to 24, we notice that they account for 15.8% of the Turkish population and 22.55 percent of the Syrian refugee population (3, 17). While the average fertility rate is 2.3 in Turkey, the regional fertility rate reaches the highest value at 3.2 in Eastern Anatolia. The total fertility rate among Syrian refugees has been determined to be 5.3, and 93% of births occur in health facilities. (17). According to the study by Vural et al. (22), Syrian refugee pregnant women make

up a statistically younger pregnant population ( $p < 0.001$ ). The mean gestational weeks and mean newborn birth weight at the time of admission for delivery were statistically lower than those of Turkish pregnant women ( $p < 0.001$  and  $p < 0.001$ , respectively) (22). Adolescent pregnancy rates are higher in Syrian refugees ( $p < 0.001$ ) (22). Premature birth rates increased ( $p < 0.001$ ). The incidence of anemia was statistically increased in Syrian refugee pregnant women ( $p < 0.001$ ). Primary cesarean section rates are lower ( $p < 0.001$ ). Prenatal diagnostic test rates and oral glucose screening test rates between 24 and 28 weeks of pregnancy were significantly lower in the Syrian refugee group ( $p < 0.001$ ). In the literature, it is claimed that in war zones, adolescent fertility rises by 30%. This is because, during times of war, households believe that marriage is the best way to secure their girls (23). This shows that countries hosting many Syrian refugees, especially Turkey, need to make serious plans in social, economic, political, and security areas and take comprehensive measures (17).

In order for Syrian children to enroll in public schools, a prerequisite is to have an official residence card or passport (24). However, since the vast majority of Syrian refugees migrate frequently within the country and do not have official residence addresses, they do not have an official document their children can benefit from public schools (24). Another problem with children enrolled in school is the foreign language problem (24). Turkey is trying to solve this problem by employing Syrian translators. However, the number of translators throughout the country is not enough to serve those in need. Therefore, only 10% of refugee children can receive a formal education (24). Fertility increases as education level falls, and women who are illiterate have two more children than women who have achieved a high school diploma or above (25). As with education, the mobility of Syrian refugees in Turkey is a significant issue, preventing them from accessing health facilities. (26). Due to the frequent migration of Syrian refugees from one province to another, community health centers face difficulties in the follow-up of pregnant, infant, and chronically ill patients (24).

Antenatal care is the foundation of maternal health and it is recommended that every mother apply to health centers for prenatal care at least four times (27). Additionally, in Turkey's public health centers, reproductive health counseling and birth control products are supplied free. The Ministry of Health and the United Nations Population Fund (UNFPA) collaborates to produce and distribute Arabic-language booklets on safe motherhood, prenatal and postnatal care, good diet during pregnancy, and positive sex attitudes (26).

Syrian pregnancies have a slightly higher rate of adolescent pregnancy. This is because of a lack of prenatal care and nutrition, the effects of conflict, a low socioeconomic status, language barriers and cultural differences that make it more difficult for pregnant women to get the care they need (11).

## **ADVERSE EFFECTS OF ADOLESCENT PREGNANCIES**

In low- and middle-income nations, childbearing among young females aged 15–19 years entails increased health risks associated with pregnancy and childbirth problems, as well as maternal fatalities (28, 29). Pregnant teenagers aged 15-19 years are twice as likely as adult pregnant women to die during pregnancy and the peripartum period (30). This rate is even greater for individuals under the age of 15 years (28). Adolescent pregnancies, besides unfavorable pregnancy outcomes, have negative effects on the future well-being of both mothers and newborn. Investigations have noted an enhanced proportion of LBW (Low birth weight), maternal anemia, prematurity, perinatal death, maternal death, acute fetal distress (AFD), cephalopelvic disproportion (CPD), oligohydramnios, pregnancy-induced hypertension (PIH), eclampsia, postpartum hemorrhage, and emergency cesarean delivery (31).

A nutritional deficit is more likely in adolescent pregnant women. In terms of dietary considerations, developing teenagers compete with the fetus (32). Adolescent pregnancies are associated with an increased risk of malnutrition, particularly in nations with lower socioeconomic levels. As a result, nutritional counseling and multivitamin supplementation containing folic acid are indicated (32). WHO defined anemia adjusted for altitude and smoking as values below 11 mg/dL for pregnant women (33). Adolescent pregnancies are less likely to visit antenatal care clinics because of financial and social barriers that may affect maternal and neonatal outcomes (34, 35). The high rate of anemia in adolescent pregnancies can be attributed to their low education level and low socioeconomic status. Adolescent pregnant women may not be aware of the necessity of regular prenatal follow-ups, oral iron supplementation, and laboratory tests to prevent anemia.

According to the findings of Aslan Cetin et al. (36), young adolescents are more likely to have spontaneous vaginal delivery (SVD) than cesarean section (CS) (36). In the same study, the adult group had a greater rate of cesarean section than the teenage group (42 percent vs. 18.3 percent, respectively,  $p < 0.001$ ). The

most common indications for CS in adolescent pregnancies were cephalopelvic disproportion (CPD) and acute fetal distress (AFD) (36). CPD was observed in 10.4% of adolescent participants and 3.3% of adult participants ( $p < 0.001$ ).

In Fleming N. et al.'s study, PIH and placental abruption were observed less frequently in adolescent pregnant women (37). In the study by Genç et al. (38), they did not find a significant difference between the adolescent and adult groups due to placental abruption. They did note, however, that the risk of preeclampsia was much higher in pregnant adults than in pregnant adolescents ( $p=0.002$ ) (38). On the other hand, in different studies conducted in Turkey and other countries, it was stated that the rates of preeclampsia and eclampsia risk are higher in adolescent pregnancies (39). Additionally, multiple studies in the literature indicate that preterm membrane rupture occurs more frequently in adolescent pregnancies (39, 40). In the study by Aslan Cetin et al. (36), the adolescent group had a higher incidence of PROM than the adult group. (aOR=1.85, 95% CI=1.24–2.77,  $p=0.003$ ).

In the study by Genç et al. (38), pregnant women aged 16 years and younger had a shorter gestational week. They noted in the same study that the pervasiveness of premature delivery was substantially higher in teenage pregnant women than in adult pregnant women ( $p = 0.0001$ ) (38, 41). The same research revealed that the risk of premature birth is statistically considerably higher among adolescents than among adults ( $p=0.0001$ , aOR: 7.54 (5.12–9.43),  $p = 0.001$ , aOR: 4, 97 (3.1–7.97)). As previously reported, pregnant teenagers are at an increased risk of having babies with low birth weights. Adolescents have been reported to have a higher smoking prevalence, which may raise the chance of low birth weight. Adolescent women have a higher rate of small-for-gestational-age newborns than do adult women (42). Infants born to teenagers have a higher risk of death and morbidity than those born to adults, and newborns born to women aged 15–19 have the highest risk (43). Pregnant refugee women may also face medical and psychosocial issues, which can impact maternal and fetal outcomes (44). According to the literature, Syrian refugee women had a greater prevalence of preterm birth, according to the findings of this study (44).

According to several studies, the rates of admission to the newborn intensive care unit (NICU) do not differ between teenagers and adults' infants (45, 46). On the other hand, Kirbas et al. (47) found that infants born to teens had a greater rate of NICU hospitalization. This could be due to the greater rate of preterm birth and lower birth weight of these babies. Although it has been suggested that the

stillbirth rate is higher among newborns born to teens (46), Karataşlı et al. (43) found no evidence of this in their study. According to Lewis et al. (46), stillbirth was related to lower socioeconomic status among young adolescents. Stillbirth was also connected to a lower socioeconomic level in young mothers.

According to previous studies, Apgar scores at the 5th minute differed according to the age of the mother. In infants born to adolescents, Vieira et al. (48) found lower Apgar scores in their study. However, according to Torvie et al. (49), low Apgar scores do not pose neonatal risks.

Adverse birth results can explain the increased risk of stillbirth in the adolescent age group (50). It is stated that intrapartum stillbirths are usually caused by obstetric complications during labor and delivery, such as shoulder dystocia or intrapartum asphyxia (50). A plausible explanation is that the adolescent body is not mature enough to prepare for childbirth. It is possible that the unsuitable social environment and the young mother's age could influence the developing fetus during pregnancy and cause her to give birth to a stillborn child (50).

The optimal approach for the management of adolescent pregnant women has not been established. Antenatal care in adolescents is generally inadequate and starts later. Antenatal care should preferably begin in the first trimester. In this way, the gestational age can be determined more accurately, and more comprehensive counseling can be given about pregnancy. Screening strategies can be developed by identifying risks related to pregnancy. Since the risk of smoking, alcohol, and illegal drug use is increased in adolescent pregnant women, precautions can be taken in this regard. Psychiatric support should be provided during pregnancy due to increased psychological problems among adolescents. Since the risk of sexually transmitted diseases is high in this age group, screening should be performed both during pregnancy and in the postpartum period for sexually transmitted diseases. Because they are more likely to be hurt or killed, especially when they are pregnant, they should take the precautions (51).

## **CONCLUSION**

Adolescent pregnancies should be closely monitored as they are considered high-risk pregnancies due to their potential health and social consequences. Preventing early marriages, which are still prevalent in our country, should be the first step toward reducing adolescent pregnancies. Adolescent pregnancy appears to be associated with a low level of education. Sex education programs for adolescents to be delivered by experts, as well as family planning counseling, should be planned. Antenatal care and follow-up should be intensified, and pregnant women should



be referred to hospitals with neonatal intensive care units for delivery. Because pregnant women in this age group are more likely to have premature births, babies who are small for their age, and babies who are low in weight, it is important to improve pregnancy prevention strategies and health services.

### **SUGGESTIONS FOR IMPROVING ADOLESCENTS AND REFUGEE WOMEN'S ACCESS TO REPRODUCTIVE HEALTH CARE**

Healthcare workers should consider refugee women a priority group to protect and improve their health. It should be emphasized that health care professionals working in primary health care should plan and develop preventive services. Healthcare professionals should be familiar with how refugee women access reproductive health services and the factors that influence this situation. Adolescents should receive services and counseling on how to avoid pregnancy and STIs (sexually transmitted infections), as well as how to deal with complications associated with induced abortion and childbirth. To increase the compatibility of refugees with the healthcare team during their birth, rather than an interpreter, a birth coach from the same culture and language should be provided. Counseling, support, and rehabilitation services should be made available to all adolescents, but especially those who have been victims of violence and abuse.

### **SUGGESTIONS FOR THE DEVELOPMENT OF PROJECTS, PROGRAMS, POLICIES, AND LEGAL ARRANGEMENTS**

Refugee women should be informed about health services, service use, and policies. Projects should be planned and implemented for migrant-friendly hospital implementation. Social awareness should be created through the media in terms of the accessibility of refugee women and adolescents to reproductive health services and their obstacles. Research and projects should be conducted to identify the reproductive health problems of refugee women and adolescents, and solutions should be developed under these results. Adolescents' perceptions regarding the use of reproductive health services and the factors affecting the use of health services should be determined. In order to prevent adolescent sexual abuse due to marriage and pregnancy, camp and home government institutions should plan visits. Efforts should be made to prevent adolescent pregnancies. Penal sanctions against responsible people should be reviewed and increased. Adolescent girls living in the camps should be identified and plans should be made so that their education is not disrupted. Training of qualified translators and



birth coaches should be planned. It should be aimed at increasing the accessibility of health services and giving immigrant individuals a say in the policies developed for them to increase the quality of health services by reducing structural barriers.

## REFERENCES

1. Sawyer SM, Azzopardi PS, Wickremarathne D, Patton GC. The age of adolescence. *Lancet Child Adolesc Health*. 2018;2(3):223-8.
2. Blum RW, Gates WH. Girlhood, not motherhood: Preventing adolescent pregnancy: United Nations Population Fund (UNFPA); 2015 [Available from: <https://www.unfpa.org/publications/girlhood-not-motherhood>].
3. Macleod C. Adolescent pregnancy: A feminist issue. *International handbook of adolescent pregnancy*. 2014:129-45.
4. TURKSTAT Corporate: The Ministry of Interior, General Directorate of Civil Registration and Citizenship Affairs; 2021 [Available from: <https://data.tuik.gov.tr/Bulten/Index?p=Birth-Statistics-2020-37229>].
5. Michas F. Adolescent fertility rate in Europe: Statista; 2019 [Available from: <https://www.statista.com/statistics/1268233/adolescent-fertility-rate-in-europe/>].
6. Hamilton BE, Martin JA, Osterman MJ, Curtin SC, Matthews TJ. Births: Final Data for 2014. *Natl Vital Stat Rep*. 2015;64(12):1-64.
7. World Health O. Adolescent pregnancy: factsheet Geneva: World Health Organization; 2014 [Available from: <https://apps.who.int/iris/handle/10665/112320>].
8. Julia F. Adolescent fertility rate in Africa by country 2019 | Statista 2021 [Available from: <https://www.statista.com/statistics/1234548/adolescent-fertility-rate-in-africa-by-country/>].
9. Adolescent birth rate, leading countries worldwide 2011-2019 | Statista 2022 [Available from: <https://www.statista.com/statistics/710712/ranking-of-leading-20-countries-with-highest-adolescent-birth-rate/>].
10. Egypt: adolescent fertility rate 2000-2019 | Statista 2021 [Available from: <https://www.statista.com/statistics/1235957/adolescent-fertility-rate-in-egypt/>].
11. Birge O, Serin AN, Kayar İ. Prevalence and cesarean rates of immigrant adolescent pregnancies. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*. 2021;10(4):1292.
12. Jittitaworn W. Adverse perinatal outcomes and models of maternity care for Thai adolescent pregnant women: A mixed methods study 2019 [Available from: <http://hdl.handle.net/10453/135987>].
13. Panna MB, Ara S, Khanam Z, Papri FS. Adolescent Pregnancy: Risk Factors, Outcome and Prevention. *Chattagram Maa-O-Shishu Hospital Medical College Journal*. 2016;15(1):53-6.
14. UNHCR. Global Trends Forced Displacement in 2020 [Available from: <https://www.unhcr.org/statistics/unhcrstats/60b638e37/global-trends-forced-displacement-2020.html>].
15. UNHCR Turkey - Fact Sheet February 2021 [EN/TR] - Turkey 2021 [Available from: <https://reliefweb.int/report/turkey/unhcr-turkey-fact-sheet-february-2021-entr>].
16. Bulut O, Sevuk S, Ustun N, Arslanoglu S, Ovali F. Retrospective Evaluation of Perinatal and Early Neonatal Outcomes in Infants of Migrant Mothers: A Case-Controlled Study. *Medeni Med J*. 2019;34(4):368-73.
17. Erdoğan MM. Syrians barometer 2019 Ankara: Orion Bookstore; 2020 [Available from: <https://www.unhcr.org/tr/wp-content/uploads/sites/14/2020/09/SB2019-SUMMARY-04092020.pdf>].
18. Erdoğan MM. Syrian Refugees In Turkey | Reports 2021 [Available from: <https://www.mmu-raterdogan.com/raporlar?pgid=k8ypprcv-c680ec23-7da6-11ea-8c85-12879e2400f0>].

19. Gumus Sekerci Y, Aydin Yildirim T. The knowledge, attitudes and behaviours of Syrian refugee women towards family planning: Sample of Hatay. *Int J Nurs Pract.* 2020;26(4):e12844.
20. Numbers of Syrians in Turkey July 2020 Refugees Association 2021 [Available from: <https://multeciler.org.tr/eng/numbers-of-syrians-in-turkey-july-2020/>].
21. Col M, Bilgili Aykut N, Usturali Mut AN, Kocak C, Uzun SU, Akin A, et al. Sexual and reproductive health of Syrian refugee women in Turkey: a scoping review within the framework of the MISP objectives. *Reprod Health.* 2020;17(1):99.
22. Vural T, Golbasi C, Bayraktar B, Golbasi H, Yildirim AGS. Are Syrian refugees at high risk for adverse pregnancy outcomes? A comparison study in a tertiary center in Turkey. *J Obstet Gynaecol Res.* 2021;47(4):1353-61.
23. Cetorelli V. The Effect on Fertility of the 2003-2011 War in Iraq. *Popul Dev Rev.* 2014;40(4):581-604.
24. Ekmekci PE. Syrian Refugees, Health and Migration Legislation in Turkey. *J Immigr Minor Health.* 2017;19(6):1434-41.
25. Cetinkaya S. The Reasons Why Women Prefer C-Sections, Their Knowledge, Behavior and Attitudes towards Abortion. *Open Journal of Obstetrics and Gynecology.* 2020;10(02):221-36.
26. Rohwerder B. Syrian refugee women, girls, and people with disabilities in Turkey. 2018.
27. Fund UNP. Maternal health: UNFPA; 2016 [updated 23 October 2019. Available from: <https://www.unfpa.org/maternal-health>].
28. Xie Y, Wang X, Mu Y, Liu Z, Wang Y, Li X, et al. Characteristics and adverse outcomes of Chinese adolescent pregnancies between 2012 and 2019. *Sci Rep.* 2021;11(1):12508.
29. Ahinkorah BO. Topic: prevalence and determinants of adolescent pregnancy among sexually active adolescent girls in Niger. *Journal of Public Health.* 2019;29(3):489-93.
30. Tetteh J, Nuertey BD, Dwomoh D, Udofia EA, Mohammed S, Adjei-Mensah E, et al. Teenage pregnancy and experience of physical violence among women aged 15-19 years in five African countries: Analysis of complex survey data. *PLoS One.* 2020;15(10):e0241348.
31. Turkay U, Aydin U, Caliskan E, Salici M, Terzi H, Astepe B. Comparison of the pregnancy results between adolescent Syrian refugees and local adolescent Turkish citizens who gave birth in our clinic. *J Matern Fetal Neonatal Med.* 2020;33(8):1353-8.
32. Keskin U, MF K. Adolesan Dönemi ve Gebelikler. *Türkiye Klinikleri Family Medicine-Special Topics.* 2018;9(5):33-8.
33. Di Renzo GC, Spano F, Giardina I, Brillo E, Clerici G, Roura LC. Iron deficiency anemia in pregnancy. *Womens Health (Lond).* 2015;11(6):891-900.
34. Lee SH, Lee SM, Lim NG, Kim HJ, Bae SH, Ock M, et al. Differences in pregnancy outcomes, prenatal care utilization, and maternal complications between teenagers and adult women in Korea: A nationwide epidemiological study. *Medicine (Baltimore).* 2016;95(34):e4630.
35. McCall SJ, Bhattacharya S, Okpo E, Macfarlane GJ. Evaluating the social determinants of teenage pregnancy: a temporal analysis using a UK obstetric database from 1950 to 2010. *J Epidemiol Community Health.* 2015;69(1):49-54.
36. Aslan CetIn B, Aydogan Mathyk B, Turan G, Guralp O, Gedikbasi A. A comparison of obstetric outcomes in adolescent pregnancies and adult pregnancies. *J Matern Fetal Neonatal Med.* 2020;33(24):4037-42.

37. Fleming N, Ng N, Osborne C, Biederman S, Yasseen AS, 3rd, Dy J, et al. Adolescent pregnancy outcomes in the province of Ontario: a cohort study. *J Obstet Gynaecol Can.* 2013;35(3):234-45.
38. Simten G, Çiftçi MA, Cıngıllıoğlu B, Aktürk E, Şahin O, Kükreci S, et al. Adverse obstetric outcomes in early and late adolescent pregnancy. *Journal of Experimental and Clinical Medicine.* 39(1):237-44.
39. Karacam Z, Kizilca Cakaloz D, Demir R. The impact of adolescent pregnancy on maternal and infant health in Turkey: Systematic review and meta-analysis. *J Gynecol Obstet Hum Reprod.* 2021;50(4):102093.
40. de la Calle M, Bartha JL, Lopez CM, Turiel M, Martinez N, Arribas SM, et al. Younger Age in Adolescent Pregnancies Is Associated with Higher Risk of Adverse Outcomes. *Int J Environ Res Public Health.* 2021;18(16):8514.
41. Bildircin FD, Kurtoglu E, Kokcu A, Isik Y, Ozkarci M, Kuruoglu S. Comparison of perinatal outcome between adolescent and adult pregnancies. *J Matern Fetal Neonatal Med.* 2014;27(8):829-32.
42. Samano R, Chico-Barba G, Flores-Quijano ME, Godinez-Martinez E, Martinez-Rojano H, Ortiz-Hernandez L, et al. Association of Pregestational BMI and Gestational Weight Gain with Maternal and Neonatal Outcomes in Adolescents and Adults from Mexico City. *Int J Environ Res Public Health.* 2021;19(1):280.
43. Karatasli V, Kanmaz AG, Inan AH, Budak A, Beyan E. Maternal and neonatal outcomes of adolescent pregnancy. *J Gynecol Obstet Hum Reprod.* 2019;48(5):347-50.
44. Turkay U, Aydin U, Salici M, Caliskan E, Terzi H, Astepe BS, et al. Comparison of pregnant Turkish women and Syrian refugees: Does living as a refugee have an unfavorable effect on pregnancy outcomes? *Int J Gynaecol Obstet.* 2020;149(2):160-5.
45. de Vienne CM, Creveuil C, Dreyfus M. Does young maternal age increase the risk of adverse obstetric, fetal and neonatal outcomes: a cohort study. *Eur J Obstet Gynecol Reprod Biol.* 2009;147(2):151-6.
46. Lewis LN, Hickey M, Doherty DA, Skinner SR. How do pregnancy outcomes differ in teenage mothers? A Western Australian study. *Med J Aust.* 2009;190(10):537-41.
47. Kirbas A, Gulerman HC, Daglar K. Pregnancy in Adolescence: Is It an Obstetrical Risk? *J Pediatr Adolesc Gynecol.* 2016;29(4):367-71.
48. Vieira CL, Coeli CM, Pinheiro RS, Brandao ER, Camargo KR, Jr., Aguiar FP. Modifying effect of prenatal care on the association between young maternal age and adverse birth outcomes. *J Pediatr Adolesc Gynecol.* 2012;25(3):185-9.
49. Torvie AJ, Callegari LS, Schiff MA, Debiec KE. Labor and delivery outcomes among young adolescents. *Am J Obstet Gynecol.* 2015;213(1):95 e1- e8.
50. Wilson RE, Alio AP, Kirby RS, Salihu HM. Young maternal age and risk of intrapartum still-birth. *Arch Gynecol Obstet.* 2008;278(3):231-6.
51. Agbonjimi L, Ogunleye A, Oluwadare M, Ayobami AA. Determinants of Increased Prevalence of Teenage Pregnancy Among Female Senior Class Students in Two Selected Secondary School in Sagamu, Ogun State, Nigeria. *Middle European Scientific Bulletin.* 2022;21:1-17.C

