

The Physical And Psychological Problems Of Pregnant Women Who Have Gestational Diabetes Mellitus And Are On Partial Bed Rest¹

Hastanede Yatan Gdm'li Gebelerin Fiziksel Ve Psikolojik Bakım Gereksinimlerinin Belirlenmesi

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ABSTRACT

Background: This study examined physical and psychological symptoms of gestational diabetes mellitus diagnosed and bed rested pregnant women and appropriate nursing care for them.

Methods: This study was cross-sectional and performed in a university hospital between April 2012 to 2013. The sample of study was consist of 44 gestational diabetes mellitus diagnosed and at least five days bed rested pregnant women. In data collection, Personal Identification Form, Antepartum Symptom Report and Antepartum Hospital Stressors Inventory were used. Descriptive statistics and Pearson correlation analysis were used in data analyze.

Results: The pregnant women's physical symptoms were determined 93% change in sleeping patterns, 90.9% back pain and 84% fatigue. Their psychological symptoms were found 27.3% difficulty in concentrating, 40.9% mood changes, and 90.9% anxiety. There were a correlation between the subdimensions of Antepartum Hospital Stressors Inventory (Separateness, Environment, Health Condition, Communication with Health Professionals, Self-image, Emotional Condition and Family State) and psychological symptoms, mood change, anxiety and boredom ($p < 0.05$). Between the physical and psychological symptoms of the women could not find any correlation ($p > 0.05$).

Conclusion: The study suggests that physical and psychological symptoms of the pregnant women should be well considered in bed rest and appropriate care should provide for them.

Key Words: Bed Rest, Gestational Diabetes, Prenatal Care, Stressors, Symptoms.

ÖZET

Giriş: Bu çalışma gestasyonel diyabet tanısı ile hastanede yatan gebelerin, hastanede yatak istirahatinde yaşadıkları fiziksel ve psikolojik semptomların ve uygun hemşirelik bakımının belirlenmesi amacıyla planlanmıştır.

Yöntem: Bu kesitsel çalışma, Nisan 2012 ile 2013 arasında bir üniversite hastanesinde gerçekleştirilmiştir. Çalışma örneklemini, gestasyonel diabetes mellitus teşhisi konmuş ve en az beş gün yatak istirahatinde olan 44 kadını içermektedir. Veri toplamada; Birey Tanılama Formu, Antepartum Semptom Listesi ve Antepartum Hastane Stresörleri ölçeği kullanılmıştır. Veriler tanımlayıcı istatistikler ve Pearson korelasyon analizi ile değerlendirilmiştir.

Bulgular: Gebelerin yaşadığı fiziksel semptomlar; %93 uyku düzeninde değişiklik, %90.9 sırt ağrısı ve %84 yorgunluk olarak belirlenmiştir. Psikolojik semptomlar; %27.3 konsantrasyon gücü, %40.9 duygu durum değişikliği ve %90.9 anksiyete olarak bulunmuştur. Ayrıca Antepartum Hastane Stresörleri Ölçeği alt boyutları (Ayrılık, Çevre, Sağlık Durumu, Sağlık Çalışanlarıyla

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İletişim, Benlik, Duygusal Durum ve Ailenin Durumu) ile psikolojik semptomlar, duygu durum değişikliği, anksiyete ve can sıkıntısı arasında ilişki bulunmuştur ($p < 0.05$). Kadınların fiziksel ve psikolojik semptomları arasında anlamlı bir ilişki bulunamamıştır ($p > 0.05$).

Sonuç: Gestasyonel diyabeti ve yatak istirahatinde olan gebelerin fiziksel ve psikolojik semptomlarının iyi değerlendirilmesi ve uygun bakımın verilemesinin sağlanması gerekmektedir.

Anahtar Sözcük: Gebelik Diyabeti, Prenatal Bakım, Semptomlar, Stresör, Yatak İstirahati

BACKGROUND

When pregnancy is followed in a healthy way and there are no risk situations, it is a period full of good expectations for many women. For a smaller number of women with chronic diseases or older age, some problems that occur with pregnancy can cause them to experience intense fear and uncertainty. In such cases, both mother and baby will need to receive intense support and strict follow-up in order to reach the end of pregnancy healthy. This group that requires close follow-up and is given bed rest, constitutes 20% of the pregnancies and is called high-risk pregnant (Bigelow-Stone, 2011). According to Turkey Demographic and Health Survey (TDHS) 2018 datas, births occurring in Turkey were found to be 35.2% avoidable and 30.5% unavoidable/inevitable in a high risk category.

High risk pregnancy is described as "a physiological and psychosocial condition that endangers life and health of mother, fetus or newborn, and increases risk of disease and death". The high risk pregnant groups are various: Placental anomalies, multiple pregnancies, preeclampsia, systemic diseases (diabetes, infection, anemia, etc.), intrauterine growth retardation, cervical insufficiency, premature rupture of membranes (PROM), preterm birth threat and Rh incompatibility (Bigelow-Stone, 2011; Karaçam-Şen, 2012). In the high-risk pregnancy profile study conducted in Izmir province, it was found that 9% of pregnant women with gestational diabetes mellitus (Soğukpınar, et al. 2018).

In most of the risk situations experienced during pregnancy, the priority recommended for the pregnant is bed rest at home or hospital. Bed rest generally advised to high risk pregnant women in their 20-36. gestational weeks. This recommendation is thought to regulate uterine perfusion and circulation of fetus, reduce pressure on the cervix, and create a resting opportunity for the pregnant woman (Çoban, 2008; Maloni, 2010; Taşkın, 2011). However, randomized controlled studies could not prove the benefit of bed rest in preventing risk situations in pregnancy, and found that it causes complications such as thromboembolism, circulatory disorders and depression. Also there were no difference found between fetal growth, infant outcomes/ birth weight, gestational age at birth, pregnancy complications of bed rested or ambulated pregnant women. No evidence could found to support or refute bed rest advised to prevent preterm birth (Maloni, 2010; Sosa, et al. 2015). In addition, regular physical activity and exercise was found safe for pregnant and did not increased preterm delivery risk and decreased GDM and depression in pregnancy (Satterfield, et al. 2016; American College of Obstetricians and Gynecologist [ACOG], 2020).

Information about type and duration of bed rest recommendation for high-risk pregnancies is not clear. A study conducted by Maloni and friends, at the national level in the USA, indicated that bed rest types and durations, were recommended by gynecologists and obstetricians in risk situations (such as certain, simple housework, part time work, short walking, rest, etc.) and their duration differ from each other. Antepartum bed rest/ activity restriction causes physiologic and psychological side effects and affect interpersonal, financial, and societal well-being of women, their family and infants. (Bigelow-Stone, 2011; Karaçam-Şen, 2012; Maloni, et al. 1993; Maloni, 2010).

Hospitalized high-risk pregnant women experience physical problems due to pregnancy, health problems leading to high-risk pregnancy and decreased activity (Bigelow-Stone, 2011; Karaçam-Şen, 2012; Maloni, et al. 1993; Maloni, 2010). These problems were;

Muscle weakness, pain and bone tissue loss due to prolonged bed rest

Spending most of the day in bed causes muscle weakness and pain. Normally, pregnancy physiology provide shifts of maternal calcium for bone development of fetus. However, bed rested pregnant are six times more likely to lose $\geq 5\%$ of density of their bone within 20 weeks. Exercises that work the muscles of arms, back, legs and feet made in the bed contribute to relieving the pain, reducing stress, increasing comfort and well-being. In the literature, it is reported that exercises performed in the bed are safe for pregnant women (Bigelow-Stone, 2011; Gökbaraz, 2019; Karaçam-Şen, 2012; Soğukpınar, et al. 2018).

Activity intolerance due to prolonged bed rest

For women at bed rest, complaints such as increased heart rate, shortness of breath, orthostatic hypotension, dizziness, syncope and fatigue can be seen. These pregnant women should be informed that they may experience dizziness and syncope while getting out of bed and when they have such complaints, they should stand up gradually or sit down until they pass (Bigelow-Stone, 2011; Karaçam-Şen, 2012).

Weight loss due to hospital environment, lack of activity and decreased appetite

The weight of the pregnant woman should be checked every day and changes in appetite should be recorded. The studies



have shown that offering different types of foods and eating small and frequent meals can prevent weight loss. But generally, bed rested women and their fetus do not gain enough weight during bed rest in hospital (Bigelow-Stone, 2011; Karaçam-Şen, 2012; Soğukpınar, et al. 2018).

Increase in gastrointestinal system complaints during pregnancy due to lack of activity

For reflux, it will be appropriate to sit or raise the head for a while after meals, and for constipation, a diet rich in fiber, increasing fluid intake, regular toilet habits, and starting basic laxatives if it causes great distress to the pregnant woman (Bigelow-Stone, 2011; Gökbaraz, 2019; Karaçam-Şen, 2012; Soğukpınar, et al. 2018).

Ear, nose congestion and headache due to bed rest

In bed rested pregnant women, it will be beneficial to raise the head of the bed and instill saline into the nose in order to reduce complaints such as ear and nose congestion and headache caused by the migration of lymph fluid in the legs towards the upper parts of the body (Bigelow-Stone, 2011; Karaçam-Şen, 2012).

Sleep problems, anxiety, and fatigue

Wake cycles, sleeplessness and fatigue occurs in the pregnancy, due to circadian rhythm disturbances and loss of postural cues. Also high distress and short sleep duration could cause high fasting glucose levels in pregnant women. The chronically loss of sleep is related to somatic and mental disorders in pregnancy and negative pregnancy outcomes; chronic sleep loss yields a stress-related hypothalamic–pituitary–adrenal axis and abnormal immune/inflammatory reaction, which affect negatively outcome of pregnancy. Continuously informing pregnant women about the health of herself and her baby, adjusting the medication hours and practices for the patient in a way that does not disturb the sleep pattern, minimizing the noise of the staff working in the service, avoiding daytime naps, listening to music will help to eliminate insomnia (Bigelow-Stone, 2011; Gökbaraz, 2019; Horsch, et al. 2016; Karaçam-Şen, 2012; Palagini, et al. 2014).

Deep vein thrombosis, thromboembolism and circulatory disorder

Bed rest has effects such as fluid electrolyte loss, decrease in blood volume, reduction in cardiac output and stroke volume, glucose intolerance and increase in coagulation factors in pregnant women. Thromboembolism possibility is higher due to hypercoagulability in pregnancy. Also immobilization leads to venous stasis, one of the known risk factors for thrombosis (Bigelow-Stone, 2011; Soğukpınar, vd. 2018).

Mood disorder and depression

It is stated that pregnant women with hospitalization experience have high levels of anxiety, stress and needs of psychosocial support (Üzar, et al., 2019). There are stressors such as social and physical environment change caused by hospitalization due to high risk pregnancy, change in the health of herself and the baby, activity restriction, dependency on others, treatment, tests and interventions, separation from the family, decreased privacy and uncertainty. These stressors cause feelings of loneliness, weakness, restlessness, fear, anger and hostility during pregnancy (Bigelow-Stone, 2011, Gökbaraz, 2019; Karaçam-Şen, 2012). This intense stress during pregnancy causes the immune system suppress, increase plasma cortisol levels in the mother and baby, affect fetal brain development, decrease placental blood flow and consequently it cause decrease in birth weight of fetus and increase in possibility of preterm birth (Taşkın, 2002; Helbig, et al. 2013; Ölçer-Oskay, 2015; Staneva, et al. 2015; Weinstock, 2005; Woods, et al. 2010).

In addition to the support of family and friends, hospitalized pregnant need healthcare professionals support for coping with all these problems. Listening to the concerns of pregnant women, sharing their experiences and taking time to talk with them are among the important nursing initiatives (Serçekuş-Okumuş, 2004). Nurses who play a important role in care and treatment of bed rested gestational diabetes diagnosed pregnant; should know the physical and psychological problems which they may experience due to bed rest and implement nursing interventions that can prevent or minimize these problems. While there are studies in the literature about hospital experiences of high risk pregnant women and physical and psychosocial side effects of antepartum hospital bed rest and this experiment, there are a few studies specifically made for GDM diagnosed pregnant women (Carolan, 2013; Lapolla, et. al. 2012; Hui, et. al. 2014; Schmidt, et. al 2019). For all these reasons, this study was planned in order to determine the physical and psychological symptoms and care needs of hospitalized, bed rested and gestational diabetes diagnosed pregnant.

METHODS

Study Design

This study was cross-sectional designed.

Study Setting

The study was carried out in an obstetric clinic of a university hospital in Izmir, which is the third largest city in western Turkey.

Study Sample

The inclusion criterias for the pregnant women to be included in study were being age of 18–40 years, in second



or third trimesters, having singleton pregnancy and gestational diabetes mellitus (GDM) diagnosis, staying in a partial bed resting in hospital for at least 5 days, having no visual or hearing problems, being able to speak and read Turkish and agreeing to participate to the study. The exclusion criterias for this study were not having psychiatric disease or multiple babies and being in the first trimester. The pregnant women with GDM who meet the inclusion criteria were selected by simple random sampling. In this study, all the pregnant women (n=50) who had GDM diagnosis and partial bed rest, received diet and insulin therapy in the obstetric clinic between April 2012 to 2013 were targeted; however, six women were excluded from the study because they completed the questionnaire incorrectly. Therefore, the study performed with 44 GDM diagnosed pregnant women.

Data Collection Tools

As data collection tools, the “Personal Identification Form (PIF)” “Antepartum Symptom Report (ASR)” and the “Antepartum Hospital Stressors Inventory (AHSI)” were used.

The Personal Identification Form was used to collect socio-demographic and obstetric data and was prepared according to existing literature by the researchers (Pamuk-Arslan, 2009; Oskay, 2004; Carolan, 2013; Hediye-Korkmaz, 2005; Karaçam-Şen, 2012; Çoban, 2015). PIH is composed of 19 questions, five of which concern socio-demographic features and 12 of which assess obstetric features such as gestational age, number of births pregnancies, the state of being planned pregnancy, before the presence of high-risk pregnancies etc.

The ASR was developed by Maloni and friends in 1993 to identify physical and psychological symptoms experienced by pregnant women with bed rest. This likert type scale was consisted of 46 items. The Cronbach (α) was found 0.79 in Maloni’s study, 0.94 in Turkish reability study of Oskay (2001) and 0.88 in this study.

The AHSI was developed by White and Richie in 1984 and revized in to likert form by Maloni to determine the stressors of hospitalized high-risk pregnant women. The AHSI consist of 49 potential stressors for women hospitalized in pregnancy. The stress factors that make up the scale and include "Separation", "Environment", "Health status", "Communication with health professionals," "Self-image", "Emotional state" and "Family status" is collected in 7 sub-groups. The subjects were requested to respond to each item by assigning a degree of stress on a continuum form “no stress= 0” to “a great deal of stress=4”. The opinion “does not apply to me” is also available. The Cronbach (α) was found 0.61–0.93 in White and Richie’s (1984) study, 0.63–0.93 in study of Maloni and friends (1993), 0.65–0.83 in Turkish reability study of Oskay (2001) and 0.61- 0.83 in this study. The higher score gained from the scale means higher exposure to stress.

Procedure of Data Collection

The pregnant women with GDM who were hospitalized in order to provide glycemic control receive routine clinical care in obstetric clinic. Thus, data collection was carried out outside hours of the implementation of routine clinical care. Also, it had been noted that data collection was performed outside time of visitors. Personal Identification Form, ASR and AHSI were filled out by the pregnant women during a face-to-face interview that lasted approximately 20 minutes, performed privately in their clinic room.

Data Analysis

Statistical analyses were performed using the Statistical Package Program for Social Sciences, version 18.0 (SPSS, Inc., Chicago, IL). The demographic and obstetric characteristics of the women were assessed using descriptive statistics. The reliability of the scale was measured using Cronbach’s alpha coefficient. The correlation between stressors of hospitalized high-risk pregnant women and psychological symptoms experienced by pregnant women was assessed by Pearson correlation analysis.

Ethical Consideration

The necessary written approvals were obtained from the Scientific Ethic Committee of Ege University Nursing Faculty (B.30.2.EGE.0.28.73.00), the obstetric clinic of the university hospital where the research was carried out, and from the participants and the owners of the scales. The aim of the study was explained to all participating women, and informed consent was obtained. Researchers also informed the participating pregnant women about the confidentiality of their information.

RESULTS

GDM diagnosed pregnant women’s 38.6% were aged between 25 and 32, 34.1% were high school graduated, and 65.9% were housewives. Their 56.8% had incomes equal to their expenses, 38.6% was experiencing their first pregnancy, and 22.7% had a living child. Of them, 63.6% had no miscarriages and 70.5% had no abortion (Table 1). The pregnant women’s 59.1% control their GDM by diet and 40.9% with insulin therapy. The pregnants had stayed at hospital average 14.00 ± 10.03 (5-60) days.

These women who were taken to bed rest, 59.1% had indigestion and nausea (57.7% were mild), 68.2% had reflux (56.7% were moderate), and 61.4% had reduced appetite (48.1% were moderate). Of them, 62.4% had hip pain (44.4% were moderate) and dry skin (51.9% were moderate), 77.3% had inguinal (67.6% were moderate) and leg pain (64.7% were moderate), and 52.3% had discomfort in other abdominal parts (47.8% were moderate). Of them, 90.9% had back pain (77.5% were moderate), 31.8% had rashes and sores (42.9% were mild and 42.9% were moderate), and 72.2% had lip dryness (53.1% were moderate). Of them,



86.4% had skin sensitivity (50% were moderate), 29.5% had shooting pain in their heels (61.5% were moderate), and 47.7% had muscle pain (52.4% were moderate). Of them, 40.9% had sensitivity in their knees (44.4% were mild and moderate (each)), 75% had pelvic pain (60.6% were moderate), and 86.4% had muscle cramps (52.6% were moderate). Of them, 45.5% had headaches (55% were mild), 22.7% had visual problems (70% were mild), and 93.2% had changed sleeping patterns (Table 2).

Other symptoms included: shortness of breath in 34.1% (46.7% were mild), dizziness in 40.9% (66.7% were mild), fainting in 43.2% (68.4% were mild), fatigue in 84.1% (54.1% were moderate), constipation in 40.9% (44.4% were mild and 44.4% were moderate), nasal obstruction in 43.2% (89.5% were mild), edema in 75% (45.5% were mild and 45.5% were moderate) and hemorrhoids in 20.5% (66.7% were moderate (Table 2).

Their psychological symptoms were: difficulty in focusing attention in 27.3% (58.3% were moderate), uneven temperament in 40.9% (55.6% were moderate), stress-nervousness in 90.9% (52.5% were moderate), boredom in 95.5% (45.2% were severe), perceptual changes in 15.1% (85.7% were mild), nightmares in 9.1% (75% were mild) and other problems in 6.2% (Table 3).

According to the AHSI, the most stressful issues for the pregnant women were the baby's health (a score of 3.11 out of 4), birth (3.04), needing a special diet (3.06), test results (2.88), being away from their families (2.86), eating hospital meals (2.86), curiosity about how long they would stay in hospital (2.81), concern about their own health (2.75) and feeling distressed (2.70) (Table 4).

When the relationship between the subscales of the AHSI (separation, environment, health concerns, communication with health professionals, self-image, emotional status and family status) and the pregnant women's psychological symptoms was analyzed, a relationship was found between uneven temperament, stress and boredom (Table 5).

No significant relationship was found between the physical and psychological symptoms for the pregnant women with GDM ($p > 0.005$).

DISCUSSION

According to study findings, as a result of treatment (bed rest, diet and insulin therapy) and complications of GDM during their hospitalization period, pregnant women experienced many health problems. These physical and psychological symptoms were ranged from gastrointestinal, dermatological, respiratory and circulatory system to visual, emotional and pain complaints. Especially, the women experienced stress during their treatment at hospital and this stress affected their sleep, concentration, temperament and perceptions.

In this study, nearly half of the pregnant women could control their GDM by diet and insulin therapy. In another study, women declared that thinking about baby was the most

powerful motivator to succeed management of GDM regimens. And also these women followed up had a shock, came terms of GDM, worked it and learned new strategies, looked their future, took social support stages and at soon managed their treatment (Carolan, 2013). Nollino and friends (2019) study showed a structured GDM management protocol developed by a diabetes team (nurses and dietitians), improved women GDM treatment management and reduced number of medical visits of them without increasing hypoglycemia, macrosomia, or hyperweight gain risk during pregnancy. This finding shows that by assisting the GDM diagnosed pregnant women with a targeted educational and self-management program, by the help of baby motivation they could manage their treatment.

The most common physical health problems due to bed rest experienced by the GDM diagnosed pregnant women were found 93% change in sleeping patterns, 90.9% back pain, 84% fatigue, 86% skin sensitivity, 77.3% inguinal and leg pain, 75% pelvic pain and edema, 68% reflux, 59% indigestion and nausea in the study. Also similar with this study, Gökbaraz (2019) found back and pelvic pain (44.6%), nausea-vomiting (21.5%), different from the study they found preterm labor threat (41.5%) and bleeding (14.6%) symptoms due to this study performed with high risk pregnant women. Similarly with this study findings, in Şanlı, Dinçer, Oskay and Bulduk's study (2018), pain and nausea/vomiting, fatigue and sleeplessness were one of the complaints of the bed rest high risk pregnant women. Also in a ASR used study, similar but few high risk pregnant women experienced moderate/severe complaints of %54 fatigue, 44% skin sensitivity and sleep change, 42% edema, 39% reflux, 34% indigestion and (31%-43%) groin-hip-back-pelvis-headache due to the bed rest in the hospital (Pamuk and Arslan, 2009). It is considered that this difference caused due to not only from GDM diagnosed pregnant women but also other high-risk pregnancies in these studies samples.

The most common psychological health problems due to bed rest experienced by the GDM diagnosed pregnant women were found 27.3% focusing attention, 40.9% uneven temperament, 90.9% stress-nervousness, 95.5% boredom, 15.1% perceptual changes and 9.1% nightmares in the study. Also similar with this study, Gökbaraz (2019) found 8.5% mental health problems ($n=13$; %85 depression). In Arslan and Korkmaz (2005) study, the pregnant women experienced mild mood changes and moderate tension-nervousness due to hospitalization. The patients who admitted hospital a lot, reported a growing sense of boredom and anxiety during their clinical admission. Also they felt lack of privacy on ward was a great concern, as it affected their contact with hospital staff and family (Van Den Heuvel, Tunis, Franx, Crombag and Bekker, 2020). Diabetes distress is likely in women with GDM, dysphoria also find this women and there are an association between both diabetes distress, parity, adverse pregnancy outcomes, obstetric risk and mood in women with GDM (Schmidt, et al. 2019; Maloni, et al. 2002).



According to AHSI, GDM diagnosed pregnant women they had concerns about their babies and their own health, birth, diet, eating hospital meals, test results, being away from their family, hospital stay durations and feeling distressed. In literature, bed rested pregnant women's length of gestation was found shorter and the risk of a very premature birth was increased (Matenchuk, et. al 2019; Staneva, et al 2015). Because of the complications due to GDM and hospital bed rest, pregnant women may feel anxiety about the health status of the fetus, fatigue from waiting, change in mood, medication administration and care about other children (Karaçam-Şen, 2012). In literature major stressors for women in hospitalization period is separation from the family and concern about fetal wellbeing. Many women experience profound boredom, along with depression, sensory disturbances, and fatigue (Bigelow-Stone, 2011; Maloni, et al. 1993). GDM diagnosed and insulin used pregnant women have significantly higher levels of perceived and dietary management stress (Hui, et al. 2014). Similarly, with this study, women had prolonged antepartum hospitalization were examined with AHSI and all patients reported the baby's health, boredom, and eating hospital meals as the greatest stressors (Dolye, et al. 2004). In a study, bed rested high risk pregnant women had fear of losing baby and death was found (Şanlı et al., 2018). Similarly, with this study results, pregnant women had stress and concerns about baby's health, anxieties on period of hospitalization, being hospitalized, the test findings, sleeping in hospital issues (Pamuk-Arslan, 2009). In Lederman et. al (2013) study, it was found that the women explained the hospitalization experience as a burden to be endured for the health and well-being of the infant. In Lapolla and friends (2012) study; it was found that, GDM diagnosed women had trouble in following treatment regimens, and their major concern being dietary advice and blood glucose testing.

Also subscales of AHSI which were separation, environment, health concerns, communication with health professionals, self-image, emotional status and family status were found related to the women's psychological symptoms were uneven temperament, stress and boredom. There were no relationship found between this physical and psychological symptoms of the women. Similarly with this study, women requiring prolonged hospitalization was examined with AHSI and all patients reported separation from family, sleeping alone, anxiety about the pregnancy as the greatest stressors (Dolye, et al. 2004). In Pamuk and Arslan's study (2009), being young and away from family/friends, boredom and hasty behaviors of the caregivers were affected the psychological complaints in risk hospitalized pregnant women. Also in same study was found that as the frequency of communication with doctors decreased, there was an increase in physical complaints. In Uçar and Pinar study (2020), pregnant women hospitalized due to preterm delivery examined with AHSI in the start and finish day of their hospital stay. Health status, communication with health professionals, emotional state and family status scores were found higher among pregnant women when they were hospitalized, whereas separation and environment scores were higher when they were discharged

and the self-perception scores were not changed meaningfully. The depression scores increased when pregnant women were discharged, their emotional state and family status stressors also increased. According to this study results, the pregnant women's psychological symptoms effects the AHSI subscales due to hospitalization.

In a study, health care needs of high risk pregnant women were found perception of health, health management style, nutrition and metabolic status, excretion, activity, exercise style-physical findings, sleep and rest, cognitive perception, self-perception-self-comprehension, role-relationship style, sexuality and reproductive, coping/ tolerating stress and beliefs/values according to functional health patterns (Gökbaraz, 2019). Also in Kolivand and friends study (2018), the needs of GDM diagnosed women were found self-care educational/ supportive educational programs which should focus on physical activity, mental health, the role of family and religious interests. It was determined that physical and psychological complaints and hospital stressors were statistically significantly less common in pregnant women in the definitive/partial bed rest who provided comprehensive nursing care, education and counseling (Oskay-Coşkun, 2012).

According to Arda Sürücü, Büyükkaya Besen, Duman, Yeter Erbil, and Ay (2019) study, healthy pregnant women cope with their stress by using self-confident-effective coping style, than the pregnant women with GDM who use the desperate- ineffective coping style. GDM diagnosed and hospitalized pregnant women need help to cope this physical and psychological complaints caused by high-risk pregnancy and bed rest. Before the pregnant women feel anger, low self-esteem, fear and hopeless due to inhibition of hospital stay, they have to use their past coping methods. And also they could use relaxation exercises, fantasy-yoga, biofeedback, social support, massage therapy, acupuncture, music therapy, reaction therapy and strengthening spirituality are among the methods that help cope with stress by the guidance of health care givers. According to a systematic review, specifically diabetes-tailored psychological interventions are effective in reducing elevated diabetes-distress and HbA1c, but mindfulness-based interventions are not. Nurses, midwives, doctors, dieticians should identify the coping methods of pregnant women, teach this interventions to use effective coping methods and prepare for them a comprehensive antepartum program. Good nursing care positively affects the pregnancy and hospital stay experience. Nurses could speak with them about their concerns, give enough information about their station, find them peer and family support, make exercise in bed, plan daily life activities, help their selfcare, allow them make their room more familiar like home and find them social activities like handwork. Also if the pregnant women don't need certain bed rest or a treatment which they cannot manage, they should not be stayed at hospital. Home care with bed rest could be used as a different, safe, and feasible model of prenatal care for treating women with pregnancy complications. Also, telemonitoring of a high-risk pregnant women is an innovative method to monitor fetal and maternal condition from home and allows women to be in a



comfortable and private environment during this anxious times. These interventions will contribute to the elimination of stress caused by high risk pregnancy (Bauer, et al. 2010; Dolye, et al. 2004; Maloni, 2010; Ölçer-Oskay, 2015; Schmidt, et al. 2018; Serçekuş-Okumuş, 2004; Van Den Heuvel, et al. 2020).

CONCLUSION

At the result of this study, pregnant women experienced many health problems due to GDM diagnosis, hospitalization and bed rest. These physical and psychological symptoms were ranged from gastrointestinal, dermatological, respiratory and circulatory system to visual, emotional and pain complaints. Especially, the women experienced stress during their treatment at hospital and this stress affected their sleep, concentration, temperament, and perceptions. Also, there were not found any relation between the physical and psychological symptoms. And it was found

that there was a correlation between Antepartum Hospital Stressors and psychological symptoms experienced by pregnant women with GDM on partial bed rest.

The study suggests that physical and psychological symptoms should be considered to enhance the quality of the care provided to the pregnant women. Safe and cost effective comprehensive antepartum care programs should be developed by using comfortable and modern home care-based methods. Nurses, midwives, doctors, dieticians as a diabetes team should identify the coping methods of pregnant women, teach, and make them use effective coping methods like diabetes-tailored psychological interventions. Careful education and support in this period may affect more successful dietary management and this may reduce stress and insulin requirement of pregnant women. For future studies; diabetes teams can plan and perform qualitative or randomized controlled studies with GDM diagnosed pregnant women to investigate the effectiveness of their performed and tailored GDM care programs

Table 1. Demographic and Obstetric Characteristics of Pregnancies with GDM Participating in the Study.

	Özellik	N	%
Age group	16-24 years	9	20,5
	25-32 years	17	38,6
	33-39 years	15	34,1
	40 years and older	3	6,8
Employment status	Yes	15	34,1
	No	29	65,9
Education level	Primary education graduates	11	25,0
	Secondary education graduates	10	22,7
	High school graduates	15	34,1
	Higher education graduates	8	18,2
Income status	Less than expenses	9	20,5
	Equal to expenses	25	56,8
	Higher than expenses	10	22,7
Planning pregnancy	Planned	35	79,5
	Unplanned	9	20,5
Number of pregnancy	1	17	38,6
	2	10	22,7
	3	8	18,2
	4 and above	9	20,5
Number of abortion in their previous pregnancies	0	28	63,6
	1	8	18,2
	2	8	18,2
Number of curettage in their previous pregnancies	0	31	70,5
	1	7	15,9
	2	6	13,7
Number of children living	0	24	54,5
	1	10	22,7
	2	6	13,6
	3 and above	4	9,2
Total		44	100,0



Table 2. The Physical Findings for the Pregnant Women Regarding Bed Rest

Physical Findings	No		Mild		Moderate		Severe	
	N	%	N	%	N	%	N	%
Indigestion	18	40.9	15	34.1	10	22.7	1	2.3
Reflux	14	31.8	12	27.3	17	38.6	1	2.3
Nausea	18	40.9	15	34.1	8	18.2	3	6.8
Reduced Appetite	17	38.6	10	22.7	13	29.5	4	9.1
Inguinal pain	10	22.7	8	18.2	23	52.3	3	6.8
Discomfort in other abdominal parts	21	47.2	8	18.2	11	25.0	4	9.1
Hip pain	17	38.6	11	25.0	12	27.3	4	9.1
Back pain	4	9.1	3	6.8	31	70.5	6	13.6
Leg pain	10	22.7	9	20.5	22	50.0	3	6.8
External ear pain	40	90.9	1	2.3	2	4.5	1	2.3
Lower back pain	37	84.1	2	4.5	4	9.1	1	2.3
Rashes and sores	30	68.2	6	13.6	6	13.6	2	4.5
Dry skin	17	38.6	11	25.0	14	31.8	2	4.5
Lip dryness	12	27.3	12	27.3	17	38.6	3	6.8
Skin sensitivity	6	13.6	16	36.4	19	43.2	3	6.8
Shooting pain in the heels	31	70.5	8	18.2	5	11.4	0	0.0
Lower leg pain	23	52.3	11	25.0	6	13.6	4	9.1
Sensitivity in the knees	26	59.1	8	18.2	8	18.2	2	4.5
Pelvic pain/ache	11	25.0	10	22.7	20	45.5	3	6.8
Leg cramp	6	13.6	15	34.1	20	45.5	3	6.8
Earache	39	88.6	1	2.3	3	6.8	1	2.3
Headache	24	54.5	11	25.0	5	11.4	4	9.1
Visual problems	34	77.3	7	15.9	2	4.5	1	2.3
Difficulty in falling asleep	12	27.3	13	29.5	14	31.8	5	11.4
Waking up to urinate	6	13.6	13	29.5	23	52.3	2	4.5
Waking up at night	9	20.5	25	56.8	7	15.9	3	6.8
Inability to sleep after waking up	18	40.9	14	31.8	11	25.0	1	2.3
Waking up unrested	16	36.4	14	31.8	11	25.0	3	6.8
Dozing off during the day	12	27.3	18	40.9	13	29.5	1	2.3
Shortness of breath due to exercise or strenuous activity	29	65.9	7	15.9	6	13.6	2	4.5
Increased blood glucose	20	45.5	11	25.0	10	22.7	3	6.8
Dizziness	26	59.1	12	27.3	6	13.6	0	0.0
Fainting	25	56.8	13	29.5	6	13.6	0	0.0
Fatigue	7	15.9	10	22.7	20	45.5	7	15.9
Constipation	26	59.1	8	18.2	8	18.2	2	4.5
Nasal obstruction	25	56.8	17	38.6	2	4.5	0	0.0
Edema	11	25.0	15	34.1	15	34.1	3	6.8
Hemorrhoids	35	79.5	1	2.3	6	13.6	2	4.5

Table 3. Distribution of psychological symptoms that pregnant women with GDM experienced

Psychological symptoms	No		Mild		Moderate		Severe	
	N	%	N	%	N	%	N	%
Difficulty in focusing attention	32	72.7	4	9.1	7	15.9	1	2.3
Uneven temperament	26	59.1	6	13.6	10	22.7	2	4.5
Stress- Nervousness	4	9.1	7	15.9	21	47.7	12	27.3
Boredom	2	4.5	8	18.2	15	34.1	19	43.2
Perceptual changes	37	84.1	6	13.6	1	2.3	0	0.0
Nightmares	40	90.9	3	6.8	1	2.3	0	0.0

**Table 4. The Stress Scores of the Pregnant Women with GDM on Bed Rest**

Antepartum Hospital Stressors Inventory	N*	X	±SS
Separation			
6. Sleeping alone	42	1.83	1.05
7. Being away from my job	36	1.61	1.49
10. Being away from home	43	2.18	1.21
19. Being away from my husband	44	2.61	1.08
22. Being away from my normal activities	43	2.04	1.17
32. Being away from my friends	44	1.79	1.23
47. Being away from my family	44	2.86	1.13
Environment			
16. Sleeping in an unfamiliar bed	44	2.13	1.19
20. Not having privacy	44	1.72	1.30
25. Getting bored doing nothing	44	2.47	1.13
26. Eating hospital meals	44	2.86	1.00
28. Hearing my own heartbeat	43	2.51	1.31
35. Hearing the noise of the hospital personnel	44	1.31	1.09
38. Being dependent on the personnel for the room's cleanliness	43	1.34	1.08
39. Hearing the noise of the hospital	43	1.51	1.09
40. Sharing a room with other patients	38	1.63	1.17
Health Concerns			
3. Taking medicine	44	2.00	1.16
4. Concerning about my own health	44	2.75	0.99
9. Having tests	44	2.50	1.15
14. Thinking about my baby's health	43	3.11	0.98
27. Wondering how long I will stay in hospital	44	2.81	1.16
36. Concerning about other patients' health	44	1.59	0.87
44. Thinking about test results	43	2.88	1.11
48. Being tired of lying down	44	2.68	1.15
Communication with Health Professionals			
5. Trying to understand explanations about tests	44	2.65	1.14
12. Trying to understand medical terms	44	2.25	1.18
13. Being over-informed about my status	43	1.88	1.45
33. Being under-informed about my status	44	2.00	1.50
41. My caregiver team acts hastily	43	1.41	1.17
45. Talking about myself to an unfamiliar health personnel	43	1.93	1.05
49. Varied opinions of the healthcare personnel	44	2.04	1.41
Self-Image			
1. Being less active than ever	44	2.38	1.08
2. Not being at home to make preparations for the baby	44	2.36	1.20
8. Concerning about being a mother	43	2.02	1.33
11. Being questioned by other patients and visitors	44	1.45	1.08
17. Being dependent on others	44	1.47	1.06
31. Wearing pajamas or nightdress all the time	44	1.90	1.19
42. Thinking about giving birth	43	3.04	0.95
Emotional Status			
15. Feeling sad	44	2.52	1.10
21. Being afraid	44	2.25	1.01
24. Feeling distressed	44	2.70	0.90
30. Feeling anger	41	1.26	1.22
46. Feeling lonely	44	2.25	1.24
Family Status			
18. Thinking about my husband who is taking care of my responsibilities	43	2.48	1.14
23. Concerning about the care given to my children at home	33	1.66	1.67
34. Concerning about hospital costs	42	1.23	1.33

*n calculated by excluding the patients who marked the response: "does not describe me".

**Table 5. Correlation between Psychological Symptoms and Antepartum Hospital Stressors Scores of Pregnant Women**

Antepartum Hospital Stressors Inventory Subgroups	Difficulty in focusing attention	Uneven temperament	Stress-Nervousness	Boredom	Perceptual changes	Nightmares
Separation	r= .12 p>0.005	r= .41 p<0.005*	r= .59 p<0.005*	r= .60 p<0.005*	r= -.01 p>0.05	r= .08 p>0.05
Environment	r= .25 p>0.005	r= -.37 p<0.005*	r= .69 p<0.005*	r= .64 p<0.005*	r= -.09 p>0.05	r= -.01 p>0.05
Health Concerns	r= .03 p>0.005	r= .50 p<0.005*	r= .65 p<0.005*	r= .64 p<0.005*	r= -.23 p>0.005	r= -.06 p>0.005
Communication with Health Professionals	r= .10 p>0.005	r= .39 p<0.005*	r= .66 p<0.005*	r= .72 p<0.005*	r= .06 p>0.005	r= -.04 p>0.005
Self-Image	r= .06 p>0.005	r= .51 p<0.005*	r= .56 p<0.005*	r= .46 p<0.005*	r= -.19 p>0.005	r= -.05 p>0.005
Emotional Status	r= .11 p>0.005	r= .43 p<0.005*	r= .55 p<0.005*	r= .62 p<0.005*	r= .02 p>0.005	r= -.10 p>0.005
Family Status	r= .01 p>0.005	r= .46 p<0.005*	r= .53 p<0.005*	r= .54 p<0.005*	r= -.02 p>0.005	r= -.00 p>0.005

REFERENCES

1. ACOG-American College of Obstetricians and Gynecologist. (2020). Physical Activity and Exercise During Pregnancy and the Postpartum Period. ACOG Committee Opinion No:804. *Obstetrics & Gynecology*, 135(4): e178-e188.
2. Arda Sürücü, H., Büyükkaya Besen, D., Duman, M., Yeter Erbil, E., & Ay, İ. (2019). Are Levels of Coping with Stress in Pregnancy with Gestational Diabetes Worse than in Healthy Pregnancy?. *Journal of Psychosomatic Obstetrics & Gynecology*, 40(2): 114-22. doi:10.1080/0167482X.2018.1438404
3. Bauer, CL., Victorson, D., Rosenbloom, S., Barocas, J., & Silver, RK. (2010). Alleviating Distress During Antepartum Hospitalization: A Randomized Controlled Trial of Music and Recreation Therapy. *Journal of Women's Health*, 19(3): 523-31. doi: 10.1089=jwh.2008.1344
4. Bigelow, C., & Stone, J. (2011). Bed Rest in Pregnancy. *Mount Sinai Journal of Medicine: A Journal of Translational and Personalized Medicine*, 78: 291-302. doi:10.1002/msj.20243
5. Carolan, M. (2013). Women's Experiences of Gestational Diabetes Self-Management: A Qualitative Study. *Midwifery*, 29: 637-645.
6. Çoban, A. (2015). Riskli gebelikler. Şirin, A. (ed) *Kadın sağlığı*, İstanbul: Kenan Ofset Mat.
7. Dolye, NM., Monga, M., Kerr, M., & Hollier, LM. (2004). Maternal Stressors During Prolonged Antepartum Hospitalization Following Transfer for Maternal-Fetal Indications. *American Journal of Perinatology*, 21(1): 27-30.
8. Gökbaraz, M. (2019). Erken Doğum Tehdidi Olan Gebelerin Bakım Gereksinimleri. Yayınlanmamış Yüksek Lisans Tezi, Adnan Menderes Üniversitesi, Sağlık Bilimleri Enstitüsü, Aydın.
9. Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü. (2019). 2018 Türkiye Nüfus ve Sağlık Araştırması. Ankara: Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü, T.C. Cumhurbaşkanlığı Strateji ve Bütçe Başkanlığı ve TÜBİTAK.
10. Hediye, A., & Korkmaz, N. (2005). Kısmi Yatak İstirahati ile Hastanede Yatan Yüksek Riskli Gebelerin Yaşadığı Fiziksel ve Psikolojik Sorunlar. *Marmara Üniversitesi Hemşirelik Yüksekokulu Perinatoloji Dergisi*, 13(2): 350.
11. Helbig, A., Kaaseni, A., Malt, UF., & Haugen, G. (2013). Does Antenatal Maternal Psychological Distress Affect Placental Circulation in the Third Trimester?. *Plos One*, 8: 1-7. doi: 10.1371/journal.pone.0057071.
12. Horsch, A., Kang, JS., Vial Y., Ehlert, U., Borghini, A., Marquez-Vidal, P., Jacobs, I., & Puder, JJ. (2016). Stress Exposure and Psychological Stress Responses are Related to Glucose Concentrations During Pregnancy. *Br J Health Psychol*, 21(3): 712-29. doi: 10.1111/bjhp.12197.
13. Hui, AL., Sevenhuysen, G., Harvey, D., & Salamon, E. (2014). Stress and Anxiety in Women with Gestational Diabetes During Dietary Management. *The Diabetes Educator*, 40(5): 668-677. doi: 10.1177/0145721714535991
14. Karaçam, Z., & Şen, E. (2012). Yüksek Riskli Gebelerin Evde Bakımı. *Hacettepe Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Dergisi*, 19(2): 80-91.
15. Kolivand, M., Keramat, A., Rahimi, M., Motaghi, Z., Shariati, M., & Emamian, MH. (2018). Self-care Education Needs in Gestational Diabetes Tailored to the Iranian Culture: A Qualitative Content Analysis. *Iran J Nurs Midwifery Res*, 23(3): 222-29. doi:10.4103/ijnmr.IJNMR_108_17
16. Lapolla, A., Di Cianni, G., Di Benedetto, A., Franzetti, I., Napoli, A., Sciacca, L., Torlone, E. Tonutti, L., Vitacolonna, E., & Mannino, D. (2012). Quality of Life, Wishes, and Needs in Women with Gestational Diabetes:



- Italian DAWN Pregnancy Study. *Int J Endocrinol*, 784726: 1-6. doi:10.1155/2012/784726
17. Lederman, R., Boyd, E., Pitts, K., Roberts-Gray, C., Hutchinson, M., & Blackwell, S. (2013). Maternal Development Experiences of Women Hospitalized to Prevent Preterm Birth. *Sexual & Reproductive Healthcare*, 4: 133-138. doi:10.1016/j.srh.c.2013.10.004
18. Maloni, JA., Chance, B., Zhang, C., Cohen, AW., Betts, D., & Gange, SJ. (1993). Physical and Psychosocial Side Effects of Antepartum Hospital Bed Rest. *Nurs Res*, 42(4): 197-203.
19. Maloni, J., Kane, J., Suen, L., & Wang, K. (2002). Dysphoria Among High-Risk Pregnant Hospitalized Women on Bed Rest: A Longitudinal Study. *Nursing Research*, 51(2): 92-99. doi: 10.1097/00006199-200203000-00005.
20. Maloni, JA. (2010). Antepartum Bed Rest for Pregnancy Complications: Efficacy and Safety for Preventing Preterm Birth. *Biological Research for Nursing*, 12(2): 106-124. doi: 10.1177/1099800410375978
21. Matenchuk, B., Khurana, R., Cai, C., Boulé, NG., Slater, L., & Davenport, MH. (2019). Prenatal Bed Rest in Developed and Developing Regions: A Systematic Review and Meta-Analysis. *CMAJ Open*, 7(3): E435-E445. doi:10.9778/cmajo.20190014
22. Nollino, L., Marcon, ML., Kiwanuka, E., Merlotto-Cazziola, M., Sambataro, M., Sambado, L., Trevisiol, E., Scantamburlo, A., Mauri, A., Busato, E., Pirolo, R., Boaretto, M., Turolla, L., Faronato, PP., Cadamuro-Morgante, M., Migot, R., & Paccagnella, A. Can Nurse-Based Management Screening Ensure Adequate Outcomes in Patients With Gestational Diabetes? A Comparison of 2 Organizational Models. *Q Manage Health Care*, 28(1): 51-62. doi: 10.1097/QMH.0000000000000202
23. Oskay, Ü. (2001). Hastanede Yatak İstirahatindeki Yüksek Riskli Gebelerde Ortaya Çıkan Sorunların Giderilmesinde Hemşirenin Rolünün Belirlenmesi. Yayımlanmamış Doktora Tezi. İstanbul Üniversitesi, Sağlık Bilimleri Enstitüsü, İstanbul.
24. Oskay, Ü. (2004). Yüksek Riskli Gebelerde Hemşirelik Bakımı. *Perinatoloji Dergisi*, 12(1): 11-16.
25. Oskay, Ü., & Coşkun, A. (2012). Hastanede Yatak İstirahatindeki Yüksek Riskli Gebelerde Ortaya Çıkan Sorunların Giderilmesinde Verilen Kapsamlı Hemşirelik Bakımının Etkinliği. *TAF Prev Med Bull*, 11(2): 163-172. doi: 10.5455/pmb.20110729034345
26. Ölçer, Z., & Oskay, U. (2015). Yüksek Riskli Gebelerin Yaşadığı Stresörler ve Stresle Baş Etme Yöntemleri. *Hemşirelikte Eğitim ve Araştırma Dergisi*, 12(2): 85-92. doi:10.5222/HEAD.2015.085
27. Palagini, L., Gemignani, A., Banti, S., Manconi, M., Mauri, M., & Riemann, D., (2014). Chronic Sleep Loss During Pregnancy as a Determinant of Stress: Impact on Pregnancy Outcome. *Sleep Medicine*, 15(8): 853-9. doi: 10.1016/j.sleep.2014.02.013
28. Pamuk, S., & Arslan, H. (2009). Hastanede Yatan Riskli Gebelerde Hastane Stresörlerinin ve Bakım Gereksinimlerinin Belirlenmesi. *Maltepe Üniversitesi Hemşirelik Bilim ve Sanatı Dergisi*, 2(1): 23-32.
29. Satterfield, N., Newton, ER., & May, LE. (2016). Activity in Pregnancy for Patients with a History of Preterm Birth Supplementary Issue: Health Disparities in Women. *Clin Med Insights Womens Health*, 9(Suppl 1): 17-21. doi: 10.4137/CMWH.S34684
30. Schmidt, CB., Potter Van Loon, BJ., Vergouwen, ACM, Snoek, FJ., & Hoing, A. (2018). Systematic Review and Meta-Analysis of Psychological Interventions in People With Diabetes and Elevated Diabetes-Distress. *Diabet. Med*, 35(13): 1157-1172. doi:10.1111/dme.13709
31. Schmidt, CB., Voorhorst, I., Van De Gaar, VHW., Keukens, A., Potter Van Loon, BJ., Snoek, FJ., & Hoing, A. (2019). Diabetes Distress is Associated with Adverse Pregnancy Outcomes in Women With Gestational Diabetes: A Prospective Cohort Study. *BMC Pregnancy and Childbirth*, 19(223): 1-9. doi:10.1186/s12884-019-2376-6
32. Serçekuş, P., & Okumuş H. (2004). Yüksek Riskli Gebelerde Uzun Süre Hastanede Yatmanın Etkileri. *Atatürk Üniv. Hemşirelik Yüksekokulu Dergisi*, 7(3): 107-11.
33. Soğukpınar, N., Baykal Akmeşe, Z., Hadımlı A, Balçık, M, & Akın, B. (2018). Doğumevlerinde Riskli Gebelik Profili: İzmir İli Örneği. *G.O.P. Taksim E.A.H. JAREN*, 4(1): 37-44. doi: 10.5222/jaren.2018.037
34. Sosa, CG., Althabe, F., Belizán, JM., & Bergel, E. (2015). Bed Rest in Singleton Pregnancies for Preventing Preterm Birth. *Cochrane Database of Systematic Reviews*, 3(CD003581). DOI: 10.1002/14651858.CD003581.pub3
35. Staneva, A. Bogossian, F., Pritchard, M., & Wittkowski, A. (2015). The Effects of Maternal Depression, Anxiety, and Perceived Stress During Pregnancy on Preterm Birth: A Systematic Review. *Women and Birth*, 28(3): 179-193. doi:10.1016/j.wombi.2015.02.003
36. Şanlı, Y., Dinçer, Y., Oskay, Ü., & Bulduk, S. (2018). Yüksek Riskli Gebelik Yaşayan Kadınlarda Ortaya Çıkan Stresörler Ve Baş Etme Yöntemleri: Niteliksel Bir Çalışma. *STED/Sürekli Tıp Eğitimi Dergisi*, 27(5): 333-342.
37. Taşkın, L. (2011). Yüksek Riskli Gebelik ve Doğum El Kitabı. Ankara: Palme Yayıncılık.
38. Ucar, N., & Pinar, SE. (2019). The Hospital Stressors and Depression, Anxiety Levels in Pregnant Women Hospitalized Due to Preterm Delivery: A Follow-Up Study. *Perspect Psychiatr Care*, 56(2): 290-96. doi:10.1111/ppc.12426



39. Üzar-Çetin, YS., & Erkan M. (2019). Yüksek Riskli Gebelerde Psikolojik Sağlık, Algılanan Stres ve Psikososyal Sağlık. *Cukurova Med J*, 44(3): 1017-1026. doi: 10.17826/cumj.502989
40. Van Den Heuvel, JFM., Tunis, CJ., Franx, A., Crombag, NMTH., & Bekker, MN. (2020). Home-Based Telemonitoring Versus Hospital Admission In High Risk Pregnancies: A Qualitative Study On Women's Experiences. *BMC Pregnancy and Childbirth*, 20(77): 1-9. doi:10.1186/s12884-020-2779-4
41. Weinstock M. (2005). The Potential Influence of Maternal Stress Hormones on Development and Mental Health of The Offspring. *Brain Behav Immun*, 19(4): 296-308. doi:10.1016/j.bbi.2004.09.006.
42. White, M., & Ritchie, J. (1984). Psychological Stressors in Antepartum Hospitalization: Reports From Pregnant Women. *American Journal of Maternal-Child Nursing*, 13(1): 47-56.
43. Woods, SM., Melville, JL., Guo, Y., Fan, MY., & Gavin, A. (2010). Psychosocial Stress During Pregnancy. *Am J Obstet Gynecol*, 202(1): 61.e1-7. doi:10.1016/j.ajog.2009.07.041.