Introduction

Pregnancy is a perfectly natural state and should be a happy, healthy and exciting period in maternal life. But it represents a major change and pregnant have to adapt their lifestyle ***(Mayo Foundation for Medical Education and Research, 2010)*** to meet the needs of baby development. This study will discusses some of what pregnant can do to take care of themselves and their babies. It includes, rest, personal hygiene, clothes, works sexual relations, nutrition, smoking ***(Howards et al., 2012),*** coffee, tea, alcohol; and dietary habits. All can affect the fetal health in the last trimester ***(Wisborg et al., 2003).***

The women dietary habits are known to affect the nutritional status of women and indirectly affect the fetal wellbeing which may also have an effect on the prenatal outcome. However, as suggested by studies before, coffee intake causes higher spontaneous abortion rate. Coffee and tea intake should be cut down to the minimum for better prenatal outcome and the women should be advised to take adequate diet in iron, calories and proteins to avoid anemia and malnutrition during pregnancy as anemia is associated with poor prenatal outcome. Whilst it appears that moderate caffeine consumption (150mg/day) has no effect ***(Reveiz et al., 2001),*** doses in excess of 300mg/day may be associated with an increased risk of spontaneous abortion and low birth weight. Baby is completely dependent on pregnant for everything, so her diet must include food that supply what its needs to build a healthy body.

- If she smokes so does the baby.
- If she drinks tea or coffee, so does the baby.
- Is she uses drugs or medicines, so does the baby.

All these things can harm pregnant and her developing baby and may cause health and developmental problems later. This is a good time to kick the habit.

Exercise is very important to pregnant and baby. Outdoor exercise reaction gives a chance to get sun shine & fresh air. Walking is particularly good because it strengths the muscles which will be used in labor. Iron deficiency anemia of various degree affects both mother and prenatal outcome according to its degree ***(Van Dyke, 2010).***

Pregnant women who are working concern about ergonomic, risk factors that may affect them with their babies; An ergonomic risk factor is an imbalance between work & work environment which result in extra demand on the work, as posture, high force, no rest, repetitive work. The body's changes during pregnancy are caused by special hormones or "chemical messengers", two of which are progesterone and estrogen. Progesterone relaxes muscles of the uterus (where the baby develops), the stomach and the blood vessels. Progesterone may also cause some unwanted effects such as indigestion, constipation, heartburn and varicose veins. The second hormone, estrogen, plays an important role in the baby's growth, as well as the woman's breast development. During the latter stages of pregnancy, the growing uterus cause pressure beneath the lunge. Low birth weight was thought to be related to fatigue, heavy lifting and long work hours. Low birth weight also tended to occur more frequently when the women were standing for more than 3 hours at a time during the later stages of pregnancy. Exposure to high noise levels (over 85 dB) may also cause low birth weight ***(Chervenak et al., 2006).***

High fatigue, shift work, rotating or changing schedules, were found to be related to preterm birth. Preterm birth may be caused by noise exposure

prolonged standing; frequent heavy lifting (more than 50 times per week) and strenuous working postures cause pressure beneath the lungs. For this reason pregnant women often find themselves short of breath ***(Palmer et al., 2013).***

Good care during pregnancy is important for the health of mother and the development of unborn baby. Pregnancy is crucial time to promote healthy behavior and patient skills. Good antenatal care links the women and her family with the formal health system. Routine general examination, Ultrasonography and CTG will help to detect the effect of unhealthy lifestyle on the unborn baby. Rest is just as important as exercise during pregnancy. She has to get plenty of sleep at night. Most pregnant women need about 8hrs of sleep but her needs may be different. She may also needs to rest during the day ***(Bonzini et al., 2007).***

There are some things she can do to keep from getting too tired. If her work requires to be on her feet most of the day, she has to sit down, and put her feet up, and close her eyes whenever it is convenient. But if she spends most of her time sitting, she has to get up and walk around for a few minutes every hour. When she is at home, take a nap during the day, especially if she has children who take naps. Plan a short rest period and really relax about the same time every day. When resting, she may find it more comfortable to use an extra pillow as shown in the illustration ***(Snijder et al., 2012).***

During pregnancy there will probably perspire more and slight vaginal discharge because the body is going through many hormonal changes. The usual daily bathing or showering will not only refresh and relax the pregnant, but also help prevent infection. Special creams are available to soothe and soften dry scaly skin ***(Burdorf et al., 2011).***

Oral health is an important part of total health and physical well-being. As early as possible in pregnancy, seeing dentist to be checked for tooth decay, gum disease and other dental problems sure to and get the necessary treatment. Because requirement special care and attention at this time is sure. Discuss with the dentist the use of local X-rays, anesthetic agents, pain medications, and other drugs. The dentist is trained to weigh the benefits and risks of particular situation and recommend alternative procedures and treatments ***(Gisselmann and Hemström, 2008).***

Brush and floss teeth at least once a day: This disrupts plaque and bacteria that cause tooth decay and also will help to maintain healthy gums. An early dental examination followed by necessary treatment, good oral hygiene practices, and a well-balanced diet will help to maintain bright and healthy teeth. A well-balanced diet will insure that the baby develops and cuts healthy, sound teeth. Avoid sweets such as caramels, hard candies, sticky foods, and soft drinks. Sugar buildup in mouth, even for a few hours, can contribute to tooth decay ***(Hwang et al., 2012).***

During the fourth month of pregnancy clothes are tight and bras are uncomfortable. Maternity clothes are not really necessary at this time, but loose clothing may be more comfortable. Some women feel much warmer during pregnancy and find lighter weight fabrics are more pleasant. To avoid tight belts, bras, girdles, slacks, garters, and knee socks clothes that cut circulation around the legs lead to varicose or enlarged veins. A bra that fits and provides good support to breasts is important. Shoes should have a medium or low heel and provide firm support. Wearing high heels may result in an accident or an aching back ***(Burdorf et al., 2011).***

For the healthy woman, there are few restrictions on sexual intercourse during pregnancy. However, it is perfectly normal for feelings about sex to change during this time. She may go through temporary periods when desire for sexual intercourse increases or decreases. As the pregnancy progresses and abdomen becomes large, intercourse may be uncomfortable ***(Omar et al., 2013).***

Aim of the Work

To study the effect of lifestyle of pregnant women on fetal health, and fetal wellbeing during the third trimester.

Physiological Changes during Pregnancy

Pregnancy is a dynamic physiological state evidenced by several transient changes. These can develop into various physical signs and symptoms that can affect the patient's health, perceptions, and interactions with others in her environment. Patients may not always understand the relevance of their bodies' ongoing adaptations or how they relate to either her or her fetus's health. A gestational woman requires various levels of support throughout this time, such as medical monitoring or intervention, preventative care, and physical and emotional assistance. Practitioners with minimal training in gestational medicine may be hesitant to treat their pregnant patients. Because of a fear of injuring either the mother or unborn child, some practitioners may withhold care or medications from their patients, inadvertently causing harm. An understanding of the patient's physiologic changes, the effects of chronic infection or illicit drug and alcohol usage, and the risks or benefits of medications is necessary to adequately advise a patient on her options regarding medical care ***(Dellinger and Livingston, 2006).***

Body water homeostasis

Maternal blood volume expands during pregnancy to allow adequate perfusion of vital organs, including the uteroplacental unit and fetus, and to prepare for the blood loss associated with parturition ***(Chang and Streitman, 2012).***

Total body water increases from 6.5 L to 8.5 L by the end of gestation. Changes in osmoregulation and the renin-angiotensin system result in active sodium reabsorption in renal tubules and water retention.

The water content of the fetus, placenta, and amniotic fluid accounts for approximately 3.5 L of total body water ***(Hill and Pickinpaugh, 2008).***

The remainder of total body water is comprised of the expansion of maternal blood volume by 1500 mL to 1600 mL, plasma volume of 1200 mL to 1300 mL, and a 20% to 30% increase in erythrocyte volume from 300 mL to 400 mL. The pregnant patient can hemorrhage up to 2000 mL of blood before she manifests changes in heart rate or blood pressure. The rapid expansion of blood volume begins at 6 to 8 weeks' gestation and plateaus at approximately 32 to 34 weeks' gestation. The expanded extracellular fluid volume accounts for 6 to 8 kg of weight gain. The larger increase of plasma volume by 1000 mL to 1500 mL relative to erythrocyte volume results in hemodilution and a physiologic anemia ***(Chang and Streitman, 2012).***

Cardiovascular changes

Cardiovascular physiologic adaptations allow optimal oxygen delivery to maternal and fetal tissues. The heart is displaced cephalad and is rotated leftward as a result of the enlarging uterus and elevation of the diaphragm. The heart itself undergoes significant remodeling during pregnancy. All four chambers enlarge, particularly the left atrium. Atrial stretching and the increased estrogen of pregnancy lower the threshold for arrhythmias. Valvular annular diameters increase, as does left ventricular volume and wall thickness ***(Fujitani and Baldisseri, 2005).***

Mild pulmonic and tricuspid regurgitation occur in more than 90% of healthy pregnant women, and more than one third manifest clinically insignificant mitral regurgitation. Cardiac volume and mass increase concomitantly so that left ventricular function and ejection fraction remain unchanged. Left ventricular wall thickness returns to prepregnancy

measurements approximately 6 months postpartum. Cardiac output increases 30% to 50% from 4 L to 6 L/min, particularly during the first two trimesters. This increase is primarily a result of a 20% to 50% increase in stroke volume. Estrogen-mediated increases in myocardial alpha-receptors results in an increase in heart rate of 10 to 20 beats/min ***(Yeomans and Gilstrap, 2005).***

Cardiac output begins to rise gradually at 8 to 10 weeks' gestation and peaks at approximately 25 to 30 weeks' gestation. The increase in cardiac output allows increased perfusion to the uterus, maternal kidneys, extremities, breasts, and skin and is at the expense of splanchnic bed and skeletal muscle perfusion. Blood flow through the uterus approaches 450 to 650 mL/min at term and comprises approximately 20% to 25% of maternal cardiac output. Uteroplacental perfusion lacks autoregulation, and therefore perfusion of these organs relies on maternal mean arterial blood pressure. Care should be taken when administering regional anesthesia, because sympathetic blockade may result in hypotension, thereby compromising uterine and fetal perfusion. Patients should be hydrated vigorously with lactated Ringer's solution before establishing conduction anesthesia. Renal blood flow accounts for 20% of maternal cardiac output. Increased blood flow to maternal skin allows dissipation of the heat generated by the fetus ***(Hill and Pickinpaugh, 2008).***

The increased cardiac output speeds delivery of medications administered intravenously, such as induction agents. Decreased cardiac output resulting from compromised stroke volume may be seen when the parturient is in the supine position. ''Maternal supine hypotension syndrome'' results when the gravida assumes a supine position, leading to uterine compression of the inferior vena cava and abdominal aorta. Venous blood return to the heart is decreased. The decreased preload

reduces stroke volume and may result in a 25% to 30% decrease in cardiac output. Maternal symptoms include pallor, sweating, nausea, vomiting, hypotension, tachycardia, and mental status changes. Symptoms are more pronounced in the third trimester because of the expanding uterus and are alleviated by maintaining a lateral decubitus position and displacing the uterus laterally ***(Yeomans and Gilstrap, 2005).***

During surgical procedures it is imperative to maintain the patient in a left lateral decubitus position to maintain cardiac output. This position can be accomplished by placing a wedge under the patient's right hip ***(Hill and Pickinpaugh, 2008).***

Cardiac output increases by 50% during labor with increases in blood volume of 300 to 500 mL with each uterine contraction. Fifteen to 20 minutes after delivery cardiac output increases as a result of the loss of diversion of blood flow to the fetus and placenta. This redirection of approximately 500 mL of blood to the maternal circulation is termed ''autotransfusion.'' Autotransfusion and removal of aortocaval compression by evacuation of the uterus result in a 60% to 80% increase in cardiac output. Cardiac output remains elevated for 48 hours after delivery and then gradually returns to nonpregnant values over 2 to 12 weeks ***(Fujitani and Baldisseri, 2005).***

Progesterone acts to vasodilate blood vessels. This vasodilation, in conjunction with the decreased resistance of the placental bed, results in a 15% decrease in systemic vascular resistance and a decreased blood pressure. Systolic and diastolic blood pressure decreases by 5 mm Hg to 15 mm Hg with the nadir occurring at 28 weeks' gestation. Blood pressure then returns to prepregnancy values during the third trimester. Pulmonary

vascular resistance is decreased, and pulmonary artery pressure is unchanged in pregnancy. The decreases in systemic vascular resistance and pulmonary vascular resistance maintain central venous pressure within normal parameters. Central venous pressure decreases slightly, from 9 mm Hg to 4 mm Hg, by term. The low-resistance state allows the vasculature to accommodate higher volumes while maintaining pressures consistent with the non-pregnant state. Venous pressure increases progressively during pregnancy, particularly in the lower extremities. Elevated progesterone levels act to increase venous distensibility. These factors, in addition to the compromised venous return from the inferior vena cava, result in dependent edema, varicose veins, hemorrhoids, labial varicosities, and an increased risk of venous thromboembolism ***(Dellinger and Livingston, 2006).***

Engorgement of epidural veins narrows the epidural and intrathecal spaces, thereby reducing the volume of medication needed for regional anesthesia ***(Cheek and Baird, 2009).***

The concentration of plasma proteins, such as albumin, is decreased in pregnancy resulting in a decrease in colloid entotic pressure. There also is a decrease in the difference between the colloid entotic pressure and the pulmonary capillary wedge pressure, predisposing the pregnant patient to pulmonary edema in situations of increased cardiac preload or when capillary permeability is compromised. Fluid management in the surgical patient should be meticulous, because aggressive fluid resuscitation may result in extravasations of fluid into extracellular spaces. Physical examination findings associated with maternal cardiovascular changes include peripheral edema, mild

tachycardia, jugular venous distension, and lateral displacement of the left ventricular apex. Components of the first heart sound become louder in the second trimester of pregnancy, and there is an exaggerated splitting. A third heart sound (S3) also is heard in the majority of gravitas. A systolic murmur along the left sternal border may be auscultator in more than 90% of pregnant women and is the result of increased blood flow over the pulmonic and aortic valves. This murmur disappears shortly after delivery ***(Fujitani and Baldisseri, 2005).***

Continuous murmurs over the breasts in the second to fourth intercostal space also may be heard in the latter part of pregnancy and are referred to as a ‘‘mammary souffle.’’ Radiologic findings include an enlarged cardiac silhouette and straightening of the left side of the heart. ECG changes associated with pregnancy include sinus tachycardia, left axis deviation, ectopic beats, inverted or flattened T waves, and a Q wave in lead III and the augmented voltage unipolar left foot lead ***(Hill and Pickinpaugh, 2008).***

Respiratory changes

The nasal and respiratory tract mucosa become edematous and hyperemic because of the increased estrogen and increased blood volume of pregnancy. During pregnancy this change is perceived as congestion and rhinitis. These symptoms resolve within 48 hours following delivery ***(Dellinger and Livingston, 2006).***

Because the upper airways are more edematous and friable, the pregnant patient is more prone to nose bleeds and to bleeding with manipulation. Laryngoscopy and intubation should be accomplished with care, using sufficient lubricant to minimize trauma. Difficult endotracheal

intubation is a leading cause of maternal morbidity and mortality. Airway edema, breast engorgement, and the generalized weight gain of pregnancy may contribute to airway obstruction and reduced glottic opening ***(Lewin et al., 2000).***

Smaller endotracheal tubes may be required for successful intubation. As pregnancy progresses, the diaphragm is elevated 4 cm by the enlarging uterus, and the lower ribcage circumference expands by 5 cm. The increased relaxin levels of pregnancy allow the ligamentous attachments of the ribcage to relax, increasing the ribcage subcostal angle from 68^{o} to 103^{o}. Respiratory muscle function remains unaffected in pregnancy, as do the maximum inspiratory and expiratory pressures ***(Carlin and Alfirevic, 2008).*** Lung volumes change as a result of changes in the configuration of the chest wall and the position of the diaphragm. The enlarging uterus displaces the intra-abdominal contents upward and elevates the diaphragm. This elevation, with the decrement in chest wall compliance, reduces the volume of the lungs in the resting state, resulting in a 5% decrease in total lung capacity and a 10% to 25% decrease in functional residual capacity, (ie, the volume of air remaining after quite exhalation) ***(Pollock et al., 2010).***

Functional residual capacity is the sum of expiratory reserve and residual volumes, both of which are decreased. Of note, functional residual capacity in the supine parturient is 70% of that in the upright parturient. Minute ventilation is the amount of air moved in and out of the lungs in 1 minute. It is the product of tidal volume and respiratory rate and increases by approximately 30% to 50% with pregnancy. The increase is primarily a result of tidal volume, which increases by 40%, because the

respiratory rate remains fairly constant ***(Dellinger and Livingston, 2006)*.**

The increase in respiratory drive is believed to result from increased levels of progesterone, which acts as a respiratory stimulant. The increased serum progesterone levels in the first trimester of pregnancy stimulate the medullary respiratory centers in the brain and increase respiratory depth, thereby increasing alveolar ventilation. Changes occur early in pregnancy then remain fairly constant throughout. The increase in minute ventilation coupled with increased erythrocyte production works to increase oxygen-carrying capacity. After delivery, as progesterone levels fall, the respiratory drive returns to normal. Oxygen consumption increases by 30% to 60% (30–40 mL/min) during the course of pregnancy as a result of the increased metabolic demands of maternal organs, placenta, and fetus ***(Carlin and Alfirevic, 2008).***

The increased oxygen consumption coupled with a decreased functional residual capacity decreases maternal oxygen reserve and predisposes the parturient to hypoxemia and hypocapnia during periods of respiratory depression or apnea. As such, there is limited time to intubate the pregnant patient safely. Preoxygenation and denitrogenation with 100% oxygen is critical, maximizing oxygen tension within the functional residual capacity and thereby allowing more time before maternal oxygen desaturation ***(Goodman, 2002).***

Arterial PCO_2 decreases from 40 mm Hg in the non-pregnant state to 32 mm Hg to 34 mm Hg in pregnancy as a result of the increased minute ventilation. The patient therefore exists in a state of respiratory alkalosis that is

compensated by renal excretion of bicarbonate. Maternal arterial pH is maintained at 7.40 to 7.45 as bicarbonate is excreted to achieve serum bicarbonate levels of 15 mEq/L to 20 mEq/L ***(Pollock et al., 2010).***

This decrease in buffering capacity renders the pregnant patient susceptible to metabolic acidosis, as occurs in diabetic ketoacidosis. The respiratory alkalosis also shifts the oxyhemoglobin dissociation curve rightward, thereby favoring removal of oxygen to the periphery and facilitating oxygen transfer across the placenta. Maternal oxygen saturation should be maintained at 95% to maintain a PaO_2 greater than 70 mm Hg, thereby optimizing oxygen diffusion across the placenta. Fetal oxygenation is maintained when maternal PaO_2 remains above 60 mm Hg to 70 mm Hg. When it falls below this level, fetal oxygenation is compromised immediately. Carbon dioxide diffuses rapidly between maternal and fetal circulations. The lower maternal baseline PCO_2 favors transplacental transfer of carbon dioxide from the fetus to the maternal circulation for removal. Maternal PaO_2 increases slightly because of the increased minute ventilation and alveolar ventilation and may achieve levels of 100 to 105 mm Hg. This higher pressure facilitates transplacental oxygen transfer. Changing from a supine to sitting position increases PaO_2 by approximately 13 mm Hg ***(Dellinger and Livingston, 2006).***

The increase in minute ventilation is perceived by the pregnant woman as shortness of breath, which affects 60% to 76% of women. This physiologic dyspnea is caused by the increase in respiratory drive, increase in pulmonary blood volume, anemia, and nasal congestion. Symptoms typically are mild and do not tend to worsen with advancing