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THE EFFECT OF HORMONES ON PHYSIOLOGICAL AND PSYCHOLOGICAL ADAPTATIONS DURING PREGNANCY

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ABSTRACT

Background : Physiological and psychological adaptation during pregnancy is a natural thing that happens to all pregnant women, but quite a few women experience discomfort during pregnancy. Not infrequently, women feel confused and feel that this is not normal for them. Therefore, in this literature review, the author intends to raise the title "*The Effect of Hormones on Physiological and Psychological Adaptations during Pregnancy*" in the hope of helping readers to find out what hormones are related to causing discomfort during physiological and psychological adaptation, what are the normal discomforts that occur during pregnancy, the role of a husband and family, and how to deal with them.

Method : The journals used in this literature review were obtained through a database providing journals published on *Google Scholar* and *PubMed*. The researcher writes the keywords "Changes in Physiological and Psychological Hormones during Pregnancy". 9,810 results appear. Then from the 9,810 findings, the authors took 26 journals and articles that the authors felt were closely related to the title raised.

Result : Hormones that influence physiological and psychological adaptation during pregnancy are *human chorionic gonadotropin (hCG) hormones, progesterone and relaxin hormones, oxytocin hormones, thyroid hormones, cortisol hormones, estrogen hormones, and human placental lactogen (HPL) hormones*. To deal with the discomfort that occurs, women can do *Endorphine Massage, Yoga, Relaxation Techniques* such as soaking their feet in warm water, using deep breathing techniques, using aromatherapy and doing pregnancy exercises.

Analysis : Discomfort in pregnant women is normal, but if the discomfort is left unchecked it will have further impacts both physically and psychologically on the mother and fetus. Therefore, the role and support of husbands and families is very important in helping women through the adaptation period of pregnancy. It is also important to always have regular pregnancy check-ups with health workers, as well as seek the right information in dealing with discomfort problems that occur during the pregnancy period.

Conclusion : Understanding the physical and emotional changes experienced by women during pregnancy is essential to support proper pregnancy care and management.

Keywords : Hormone, Maternal Health, Psychology, Pregnancy

1. INTRODUCTION

Physical and psychological changes in pregnant women cause discomfort from the first trimester to the third trimester. Discomfort in pregnant women is normal, but if the discomfort is left unchecked it will have further impacts both physically and psychologically on the mother and fetus.

Changes and discomfort that normally occur during pregnancy are influenced by changes in hormone secretion. The presence of *human chorionic gonadotropin* (hCG) hormones produced by trophoblast cells causes increased production of *ovarian steroid hormones*. During pregnancy, the endocrine function of the placenta develops to produce hormones and releasing factors. The influence of products produced by the placenta not only affects the mother's blood circulation but also plays a role in the fetus' blood circulation. This condition is a form of adaptation by the mother's body due to physiological changes due to pregnancy and preparation for fetal development.

Changes that occur during pregnancy, for example by enlarging the uterus will affect the fulfillment of sleep breaks because it is difficult to determine a comfortable position, besides that hormonal changes can cause psychological changes that make it difficult to sleep. (AkhiriYanti et al. 2022)

The results of the study stated that the incidence of hyperemesis gravidarum was 1.3% in all pregnancies in Indonesia, and the incidence in the world of all pregnancies was: in Sweden (0.3%), Turkey (1.9%), Pakistan (2.2%), California (0.5%), Canada (0.8%), China (10.8%), America 0.5-2% and Norway (0.9%). One of the causes of hyperemesis gravidarum is stress. Where stress is a psychological form that plays an important role in these symptoms, stress factors can involve integrative regulatory mechanisms that affect biochemical and cellular processes throughout the body including the brain and psychology. (Susanti, Lainsamputty, and Ilestari 2021)

Discomfort in pregnant women is a physiological thing, but if the discomfort is left unchecked it will have a further impact both physically and psychologically on the mother and fetus. Physically, the mother will feel ongoing pain and will have an impact on the mother's activity pattern because of the pain felt in her lower abdomen, as well as disruption of the mother's rest pattern because of the cramps that are always felt when the mother sleeps.

Psychologically, the mother will also feel uncomfortable and assume that her pregnancy is very difficult to go through, so that the mother feels uncomfortable about her pregnancy. (Natalia and Handayani 2022)

2. METHODS

This chapter discusses strategies for finding journals used in literature reviews. The journals used in the literature review were obtained through a database providing journals published through Google Scholar and PubMed. The author opens the website www.google scholar.com and pubmed.ncbi.nlm.nih.gov. The researcher writes the keywords "Changes in Physiological and Psychological Hormones during Pregnancy". 9,810 results appear. Then from the 9,810 findings, the authors took 26 journals and articles that the authors felt were closely related to the title raised.

Another relevant thing that the author uses in obtaining journals about Physiological and Psychological Hormone Changes during Pregnancy. The author takes all research designs used in identifying physiological and psychological hormonal changes during pregnancy.

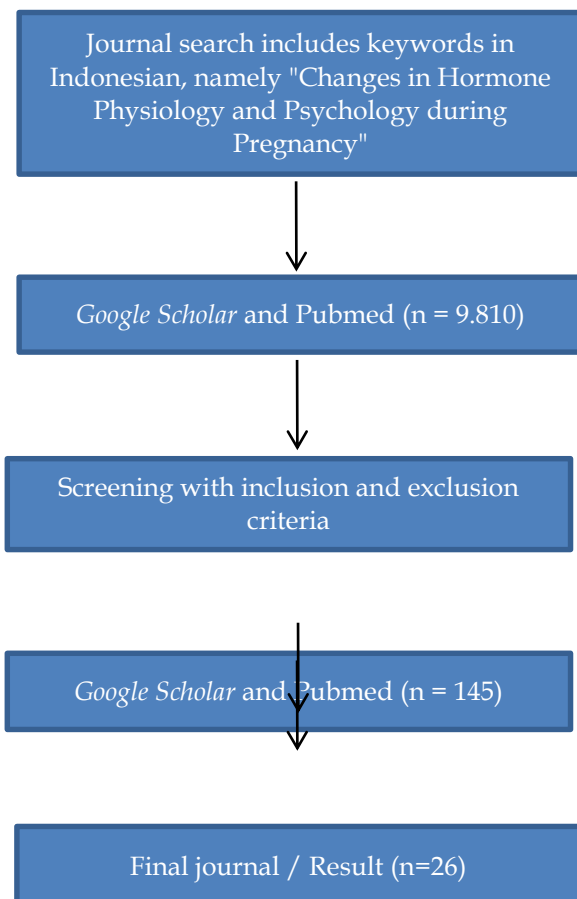
The selection of research results of journals or articles to be included in the Literature Review in this study is based on the following criteria:

Table 2.1
Inclusion and Exclusion Criteria

No.	Inclusions Criteria	Exclusions Criteria
1.	Research uses Indonesian and English languages.	Not according to the inclusion criteria (outside Indonesian and English languages).
2.	Research that covers the topic of hormones that affect physiology during pregnancy.	The research describes topics that are it is not in accordance with and do not meet the inclusion criteria,
3.	Research that contains the topic of hormones that affect psychology during pregnancy.	and have similar content with other studies that have been reviewed.

4.	The research subjects were pregnant women.	Research subjects outside the inclusion criteria (other than pregnant women, for example: Adolescents, elderly).
5.	Year of publication between 2018-2023.	Year of publication outside the inclusion criteria.
6.	Search databases used via Google Scholar and Pubmed Search	Databases used outside the inclusion criteria (eg: Wikipedia).

Table 2.2
Screening



3. RESULTS

Of the 9,810 titles found, the authors chose 31 journals which they felt were very appropriate to the discussion raised, namely on Physiological and Psychological Hormonal Changes during Pregnancy. Of the 31 journals produced the things below.

Definition of Pregnancy

Pregnancy is a meeting between sperm and egg which marks the beginning of pregnancy. (Susanti and Purnamasari 2022). Pregnancy, namely the fertilization of an ovum which eventually develops into a fetus. When ovulation occurs, the ovum with hundreds of granulosa cells attached to it will be expelled directly into the peritoneal cavity. After ejaculation within 5-10 minutes fertilization of the ovum takes place. Some of the sperm will be delivered through the uterus to the ampulla. At the end of the fallopian tubes, the ovaries are assisted by condition that requires psychological and physiological adaptation to the influence of pregnancy hormones and mechanical stress due to enlargement of the uterus and other tissues. Pregnant women will experience changes that make them uncomfortable. (Retnoningtyas and Dewi 2021)

In the process of pregnancy there are changes in anatomy and physiology, in addition to these changes pregnant women experience discomfort in pregnancy, fatigue, vaginal discharge, cravings, frequent urination and nausea and vomiting (emesis gravidarum). The above changes occur due to an imbalance of the hormones progesterone and estrogen, namely the female hormone that is in the mother's body since the process of pregnancy. Some of the complaints that make mothers feel uncomfortable include nausea and vomiting. For 50% of pregnant women, nausea and vomiting, known as emesis gravidarum, is the "unpleasant" part of pregnancy. (Dhilon and Azni 2018)

Hormonal Influence Physiology

An increase in the hormone of pregnancy (progesterone) causes a decrease in the work of the stomach and lower esophagus as a result, food that enters tends to be digested slowly so that food accumulates, this causes a feeling of fullness and bloating. Digestive factors, the hormone estrogen can trigger an increase in stomach acid, causing nausea and vomiting. (Meti Patimah 2020)

Human Chorionic Gonadotropin (HCG) is a hormone produced by young placental tissue

which is then excreted in the urine. This hormone can also be produced if there is abnormal proliferation of chorionic epithelial tissue, for example chorio carcinoma or hydatidiform moles. Increased levels of the hormones estrogen and progesterone produced by Human Chorionic Gonadotropine (HCG) in serum from the placenta can increase stomach acidity which makes pregnant women feel nauseous. (Dewanti et al. 2022)

The hormone progesterone and the relaxation hormone cause relaxation of connective tissue and muscles. This occurs maximally in the last week of pregnancy. This relaxation process provides an opportunity for the pelvis to increase its capacity in preparation for labour, the pubic bones soften to resemble the joints, the sacrococcygeal joint loosens making the coccygeal bone shift towards the back of the unstable hip joint. In pregnant women, this can cause back pain. (Dewanti et al. 2022)

During pregnancy, there are also various changes in the physiology of thyroid hormones due to various interconnected and complex factors. First, an increase in estrogen concentration causes a gradual increase in the serum concentration of the major thyroid hormone transport protein, TBG.) which is high in the uterine wall and placenta. (Anggraeni and Aryasa EM 2022)

Certain hormones have increased in number, for example the hormones cortisol, estrogen, and human placental lactogen (HPL). In pregnant women, especially at a young gestational age under 16 weeks, they often experience nausea and vomiting due to increased pregnancy hormones secreted by the fetus in the womb. This feeling of nausea and vomiting often reduces appetite so that food intake, especially carbohydrates, becomes very little or even non-existent. (Khairul 2019)

Psychological Hormone Influence

Anxiety and physical discomfort are stressors that can stimulate the sympathetic nervous system and the adrenal glands. In this situation there will be an increase in the secretion of the hormone adrenaline or epinephrine, so that it can increase tension in pregnant women which results in pregnant women becoming more restless and unable to concentrate. Leucorrhoea that comes out of the vagina is said to be normal due to increased pregnancy hormones (estrogen). (Pudji Suryani1 2018)

Cortisol is widely known as the stress hormone. Cortisol is secreted from the adrenal cortex as a result of physical and mental stressors, with increased levels observed 20 minutes after the stimulation. Cortisol was detected in blood and saliva with a correlation of 0.91 between sources, indicating that measurement of salivary cortisol levels may provide a noninvasive method of assessing stressful stimuli. Cortisol is used not only as a measure of stress but also as a measure of stress relief. Especially in pregnant women, aromatherapy massage and yoga have been shown to reduce cortisol and relieve stress. (Sonoda et al. 2021)

During pregnancy, there is an imbalance in the hormones estrogen and progesterone which not only cause physical changes, but also psychological changes that require adjustments to emotions, patterns of thinking and behavior. (18)

Psychological changes that often occur in pregnant women such as anxiety/stress. Anxiety experienced by pregnant women is caused by an increase in the hormone progesterone. Apart from making pregnant women feel anxious, the increase in hormones also causes feelings of disturbance and makes pregnant women tire quickly. (Anggraeni and Aryasa EM 2022)

The hormonal mechanism that causes discomfort:

a. Nausea, vomiting

It is estimated that during pregnancy as many as 70-85% of women experience nausea and vomiting. 52.2% experienced mild nausea and vomiting, 45.3% experienced moderate nausea and vomiting and 2.5% experienced severe nausea and vomiting, this occurred at 4-9 mg of gestational age, peaked at 12 mg of gestational age and only 20% occurred at gestational age 20mg.

1) Reason

- a) Pregnancy hormone factor (HCG), which stimulates ovarian production of estrogen and estrogen is known to increase nausea and vomiting
- b) Digestive factors, the hormone estrogen can trigger an increase in stomach acid, causing nausea and vomiting
- c) Psychological factors, feelings of guilt, anger, fear and anxiety can add to nausea and vomiting
- d) Hereditary factors, mothers who experience nausea and vomiting, the child born has a 3% risk of

- experiencing nausea and vomiting to experiencing HEG. (Qomari, Firdaus, and Rossa 2020)
- 2) Handling
- In the morning after waking up, drink sweet tea or warm sweet ginger water
 - Eat dry foods that contain carbohydrates such as biscuits.
 - Eat small amounts but often every 1-2 hours
 - Avoid spicy foods, oily/fatty foods such as fried foods
 - Consumption of foods that contain low fat but rich in protein such as eggs, fish, cheese, green beans.
 - Avoid acidic foods such as citrus fruits, tomatoes, guavas.
 - Drink at least 2 liters or 8-10 glasses a day
 - Consumption of foods that contain high folic acid such as: spinach, cabbage, corn, broccoli and lettuce
 - If nausea and vomiting continues, immediately go to the midwife or doctor. (Qomari et al. 2020)
- b. Constipation / difficulty defecating
- The prevalence of constipation is around 35% to 39% in 1st trimester pregnant women, 21% in 2nd trimester pregnant women and 17% in 3rd trimester pregnant women. (Qomari et al. 2020)
- 1) Reason
- Effect of pregnancy hormone (progesterone) and digestive hormone (motilin). Pregnancy hormone (progesterone) plays a role in the relaxation process on smooth muscle work. This increase in hormones causes the movement or mobility of the digestive organs to relax or slow down. As a result, the gastric emptying process takes longer and the transit time of food in the stomach increases. In addition, the decrease in the motilin hormone (digestive hormone) affects intestinal peristalsis (massage in the intestine, one of the activities of digesting food) also slows down so that the thrust and contraction of the intestine against food remains is weakened. As a result, leftover food accumulates longer in the intestine and is difficult to remove
 - Decreased activity of pregnant women. Lack of activity can affect metabolic processes in the body, thereby affecting intestinal peristalsis which causes constipation/difficulty defecating
- 2) Handling
- Consumption of foods high in fiber such as: whole wheat bread, fruit (papaya), nuts and vegetables (celery, cabbage, spinach, watercress etc.)
 - Avoid drinking coffee, soft drinks and alcohol and avoid smoking
 - Drink at least 2 liters or 8-10 glasses a day
 - Do light physical exercise (exercise) such as a morning walk
 - Shower or bath with warm water
 - Do a reflexology massage on the arch of the foot in a circle for 5 minutes
 - If complaints persist immediately go to the midwife or doctor.
- c. Heartburn / feeling of heat in the chest
- 30% -80% of pregnant women complain of this complaint. A burning feeling in the chest is complained of by 2-3 out of 10 women or 22% of pregnant women in early pregnancy. (Qomari et al. 2020)
- 1) Reason
- Pregnancy Hormone (Progesterone),
 - An increase in the hormone of pregnancy (progesterone) causes a decrease in the work of the stomach and lower esophagus as a result, the food that enters tends to be digested slowly so that food accumulates, this causes a feeling of fullness and bloating.
 - Pressure from the growing uterus due to pregnancy on stomach contents
- 2) Handling
- Eat small amounts but often every 1-2 hours.
 - Avoid eating before going to bed, give 2-3 hours break so food can be digested first
 - Avoid spicy foods, oily/fatty foods such as fried foods
 - Avoid acidic foods such as citrus fruits, tomatoes, guavas
 - Reduce gas-containing foods such as nuts,

- f) Consumption of foods high in fiber such as whole wheat bread, fruit (papaya), nuts and vegetables (celery, cabbage, spinach, watercress, etc.)
 - g) It is better to drink after eating and avoid eating in a hurry.
 - h) Avoid drinking coffee, soft drinks and alcohol and avoid smoking
 - i) Set the sleeping position as comfortable as possible with a half-sitting position
 - j) Wear loose and comfortable clothes
- d. Leucorrhoea
- Leucorrhoea often appears in pregnancy. The incidence rate in the first trimester was 18.5%, in the second trimester it was 33.3% and it increased in the third trimester by 48.1%. (Qomari et al. 2020)
- 1) Reason
 - a) Leucorrhoea that comes out of the vagina is said to be normal due to increased pregnancy hormone (estrogen)
 - b) Stress
 - c) Extreme fatigue. If the mother's blood sugar level is high
 - 2) Handling
 - a) Change underwear as often as possible when it feels wet and damp
 - b) Cleaning the vagina properly, namely by washing the vagina from front to back after urinating and defecating then drying it with a clean towel or tissue.
 - c) Using cotton underwear or something that is easily absorbed by sweat
 - d) If vaginal discharge increases in number accompanied by itching, pain, heat, fever, smelly discharge and changes color to green or yellow immediately go to the midwife or doctor
- e. Dizziness
- Dizziness is reported by more than half of pregnant women, which is more common in the first two trimesters of pregnancy. Dizziness occurs in as many as 50% of pregnant women and is more common in the 1st and 2nd trimesters of pregnancy (52.44%). This is a normal symptom during pregnancy. (Qomari et al. 2020)
- 1) Reason
 - a) Pregnancy hormone (progesterone). Increased hormones cause blood vessels to dilate and so blood tends to pool in the legs, causing the mother's blood pressure to be lower than normal, which can reduce blood flow to your brain, causing temporary dizziness
 - b) Anemia. This occurs due to an increase in blood plasma volume which will affect blood hemoglobin levels, so that if the increased volume and red blood cells are not matched by sufficient hemoglobin levels, it will result in anemia.
 - c) Hypertension (high blood pressure). Due to decreased blood flow to the brain, oxygen intake is also reduced, causing dizziness.
 - d) Low blood sugar levels that occur as the body adjusts to changes in the body during pregnancy
- f. Varicose veins
- This happens because there is an increase in blood plasma volume which will affect the mother's blood hemoglobin level, causing dizziness.
- 1) Handling
 - a) Consumption of foods that contain iron such as spinach, kale, broccoli, sweet potato leaves, and green vegetables and red meat
 - b) Consumption of balanced nutritious food (containing carbohydrates, proteins, fats, vitamins and minerals)
 - c) Drink at least 2 liters or 8-10 glasses per day
 - d) Set a comfortable sleeping position preferably lying on your left side
 - e) Lie down with your feet elevated
 - f) Avoid sleeping on your back for more than 5 minutes.
 - g) Adequate rest and sleep, 1-2 hours during the day and \pm 8 hours at night
 - h) Make light movements when standing for a long time
 - i) Reduce strenuous and tiring activities
 - j) Avoid sudden position changes such as from a squatting position to a standing position
 - k) Wear loose and comfortable clothes
 - l) Perform deep breathing techniques.
 - m) Avoid stress
 - n) Stay away from crowded places

- o) Open windows in the morning to get clean air
 - p) If the dizziness persists and increases accompanied by a severe headache, blurred vision, dizzy eyes, weakness, heartburn
 - g. Easily Tired

Fatigue during pregnancy is most common during the first trimester. 60% occur in the 3rd trimester.

 - 1) Reason

During early pregnancy, hormonal changes may be the cause of fatigue. The mother's body produces more blood to carry nutrients to the mother's growing baby. Mother's blood sugar levels and blood pressure are also lower. Hormones, especially increased levels of progesterone, are responsible for making you sleepy. In addition to the physical changes that occur in the body, emotional changes can contribute to decreased energy. In late pregnancy, fatigue occurs due to nocturia (frequent urination at night).(Qomari et al. 2020)
 - 2) Handling
 - a) Drink at least 2 liters or 8-10 glasses a day
 - b) Avoid drinking coffee, soft drinks and alcohol and avoid smoking
 - c) Consumption of balanced nutritious food (containing carbohydrates, proteins, fats, vitamins and minerals)
 - d) Drink warm milk \pm 2 hours before going to bed
 - e) Adequate rest and sleep, 1-2 hours during the day and \pm 8 hours at night
 - f) Do light physical exercise (exercise) such as a morning walk
 - g) If the complaint gets worse, is accompanied by a feeling of shortness of breath, heart palpitations, accompanied by dizziness, then immediately come to a health worker.
- h. Bleeding from the genitals (vagina)
 - 1) Reason
 - a) Bleeding may originate from the vagina, cervix and uterus
 - b) Miscarriage
 - c) Bleeding from the place where the placenta is embedded in the uterus
 - d) Molar pregnancy (hydatidiform mole)
 - e) Pregnancy outside the uterus (ectopic pregnancy)
 - 2) Handling
 - a) If there is bleeding in the first trimester, the most effective first aid measures are plenty of rest to reduce the risk of miscarriage and increase folic acid intake
 - b) If the mother has blood spots, immediately come to the midwife or obstetrician. (Qomari et al. 2020)
- i. Frequent urination

59% of pregnant women complain about frequent urination in the first trimester, 61% in the second trimester and around 81% in the third trimester of pregnancy.(Qomari et al. 2020)

 - 1) Reason
 - a) Trimester I, During pregnancy there are changes in the urinary system starting at 7 weeks of gestation, the desire to urinate frequently at the beginning of pregnancy is due to the enlarged uterus pressing on the bladder
 - b) Trimester II and III, As the gestational age increases, the weight of the uterus will increase and the size of the uterus will increase so that the uterus enlarges towards the outside of the pelvic inlet to the abdominal cavity. These changes cause pressure on the bladder which is located in front of the uterus. The pressure of the bladder by the volume of the uterus causes the capacity of the bladder to decrease, resulting in reduced bladder capacity. This triggers an increase in the frequency of urination
 - 2) Handling
 - a) Keep drinking during the day and reduce drinking at 2 hours before going to bed
 - b) Avoid drinking coffee, soft drinks and alcohol and avoid smoking
 - c) Do exercises to strengthen the muscles of the pelvic floor, vaginal muscles, abdomen (kegel exercises). How, contract the muscles around the vaginal opening, urinary tract and anus (such as when holding urine). Hold for a few moments, then release.

- Do at least 25 repetitions at different times of the day
 - d) Maintain personal hygiene, especially the female area (vagina)
 - e) Change underwear as often as possible when it feels wet and damp
 - f) Use clothes that easily absorb sweat such as cotton
 - g) Not holding back urination and tubing until the bladder is empty
 - h) If urination feels painful, hot, and blood comes immediately to the midwife or doctor
- j. Lower abdominal pain
- Lower abdominal pain is usually complained of by 10% -30% of pregnant women at the end of the first trimester.
- 1) Reason
 - a) Causes related to pregnancy
 - (1) The threat of miscarriage
 - (2) Pregnancy outside the uterus (fallopian tube)
 - b) Causes other than pregnancy
 - (1) There is a cyst
 - (2) uterine myoma
 - (3) Appendicitis
 - 2) Handling
 - a) Don't panic
 - b) Tell husband and family
 - c) Prepare mother's clothing equipment
 - d) Immediately check with the nearest health worker (midwife or doctor). (Qomari et al. 2020)

Midwifery care to overcome the psychology of pregnancy

- 1. Endorphins massage

Giving anxiety therapy to pregnant women such as endorphine massage and progressive muscle relaxation according to research results can reduce symptoms of anxiety experienced by pregnant women. Endorphine massage has a significant effect in reducing anxiety. Anxiety, tension and discomfort experienced by mothers in labor can be reduced because touch or endorphine massage has a positive effect on the physical and psychological well-being of the mother in pregnant women. Endorphine massage is a light massage for pregnant women which can stimulate the release of endorphine compounds which are pain relievers.

Endorphine massage techniques can give individuals self-control when there is a feeling of discomfort or anxiety, physical and emotional stress caused by anxiety.

Progressive Muscle Relaxation Therapy (ROP) and Endorphine Massage can be an option because it can be carried out easily by pregnant women and their families. Progressive muscle relaxation (ROP) developed by Edmund Jacobson Is a technique that is carried out systematically to achieve a relaxed state. that progressive muscle relaxation therapy is proven to be able to overcome complaints of anxiety, insomnia, fatigue, muscle cramps, neck and low back pain. Not different from ROP, endorphine massage therapy is also claimed to reduce anxiety in pregnant women.(Qomari et al. 2020)

2. Yoga

Yoga is the art of exercising the body and breathing which is not only beneficial for physical and spiritual fitness, but also to help expedite the delivery process. Doing yoga in third trimester pregnant women can affect the mental balance, emotional, intellectual and physical health of the mother. It affects the fetus which not only makes the fetus healthy, but also calm and comfortable. Yoga is highly recommended for pregnant women apart from being beneficial for overcoming physical discomfort. , is also useful for dealing with anxiety. (Herlina, Widya, and Rina 2022)

3. Relaxation techniques

Midwifery care with relaxation techniques is highly recommended for mothers who experience stress or anxiety, especially in pregnant women. Because anxiety is a condition in which the soul experiences anxiety that might occur in pregnant women caused by the mother's inaccurate perception of various things, such as thoughts about the birth process which will cause tremendous pain. Management efforts to reduce anxiety with relaxation techniques, including.

a. Foot soak technique

Soak your feet by inserting your feet into warm water with a temperature of 40-42 0C with a limit of immersion at a depth of 5 cm above the ankle. This is

done for 10-20 minutes. Soak your feet can be done before going to bed.

- b. Deep breathing technique (diaphragm)
Diaphragmatic breathing technique (deep breathing) also includes techniques used in the application by inhaling through the nose (done in 4 counts or 4 seconds), given a pause before releasing air on the 5th to 10th count and then exhaling through the mouth slowly. slowly. (Herlina et al. 2022)
- c. Lavender aromatherapy
Aromatherapy is used by inhalation (inhaled) is the fastest way for the body to quickly get the benefits of aromatherapy. The way to use lavender aromatherapy in this application is to drip 5 drops of lavender by mixing 20 ml of water which is heated using a small stove and giving this lavender aromatherapy for 20 minutes. (Khotimah and Sulastris 2019)
- d. Pregnant gymnastics
Basic relaxation exercises with pregnancy exercise can have a positive impact on overcoming sleep disturbances, the movements of pregnancy exercise contain a relaxing effect that is beneficial to stabilize anxiety and reduce fear by means of physical and mental relaxation. Pregnancy exercise is an attempt to achieve optimal conditions in preparing for the birth process with exercises for pregnant women. (Podungge 2020)

Husband's assistance on pregnancy anxiety

According to research which says that emotional support or informational support given to pregnant women shows a very positive impact on the perceived mental well-being of pregnant women and indirectly improves well-being by reducing the condition of symptoms of anxiety. The impact of anxiety in pregnant women it can increase the risk of premature birth or low birth weight, due to an increase in stress hormones, namely the hormone cortisol and catecholamines, the hormone adrenaline in response to fear will inhibit blood flow to the uterus and make the fetus short of air, in this case the release of these hormones will result in changes in the function of. The most fatal impacts that may occur ranging from premature birth, physical development

irregularities or disabilities to mental retardation, there are several factors that determine the level of anxiety in pregnant women who will face the birth process, one of which is social support from the family, especially husbands or partners, women who nurtured and loved by their husband during pregnancy will result in fewer physical and emotional symptoms, fewer complications during labour, and more adaptability during the puerperium. (Wahyudi, Dasuki, and Anjarwati 2019)

Husband is the closest person who can play an important role for women who are giving birth. Husbands as delivery companions can bring peace to wives who are about to give birth and can play an active role in providing physical support and moral encouragement. The role of the husband is one of the keys so that mothers can maintain positive emotions during pregnancy. When cravings, the wife tends to be spoiled and becomes more sensitive. Husbands are required to have good emotional maturity so that they can face good support for their husbands which will make the pregnancy process enjoyable and the condition of the fetus is always strong and healthy.

Family support, especially the husband plays a very important role in maintaining or maintaining a person's integrity both physically and psychologically. Someone in a state of stress will seek support from others so that with this support, it is hoped that it can reduce stress (anxiety). In addition to playing a role in protecting a person against sources of stress, husband's support also has a positive influence on the health condition of pregnant women. Someone with high family support will be able to handle stress well. Family support (husband) involves a network that is quite extensive, has a positive impact that is directly beneficial to one's health and well-being and can reduce anxiety and helplessness. surrounding environment. Family support (husband) can modify a person's reaction to anxiety stressors after conducting previous assessments. People who do not get support from their families have a high tendency to experience the negative effects of stress (anxiety). (Isnaniar, Norlita, and Gusrita 2020)

The theory put forward by Handayani (2014), attention and support from the closest people, especially the husband, is very helpful in overcoming the anxiety experienced by pregnant women because of the changes both physical and psychological that occur during pregnancy. Husband's support will increase psychological

well-being and self-adjustment ability through feelings of belonging, increased self-esteem, psychological prevention, stress reduction and provision of resources or assistance needed during pregnancy. Lack of moral support from family and husbands can cause many mothers to pregnant women feel worried and afraid in facing labor so that it causes feelings of anxiety. Pregnant women with high family support, especially husbands, will change their response to sources of anxiety and go to their families to pour out their hearts. One of the husband's supports shown is emotional support. Emotional support is the extent to which individuals feel that the people around them provide attention, encourage, and help solve problems faced by individuals. The emotional attention in the form of warmth, care, and empathy given by the husband to his wife during pregnancy will make the mother feel comfortable and have confidence that she is not alone going through the pregnancy period until she finally arrives at the time of delivery. The effects of prolonged emotional stress during pregnancy affect endocrine balance, so anxiety can continue into the postnatal period and affect adjustment to postnatal life. Babies show hyperactivity which will hinder adjustments to eating patterns, sleep and smell will often cry.

The husband has a very big role to provide support to the mother during labor, namely by accompanying his wife during the birth process indirectly teaches her husband to be able to respect the mother more, research also shows that there is nothing more effective in helping a prospective mother to deal with childbirth than good support from prospective midwives and friends who are chosen to accompany her. The role of the husband makes the husband able to function with various intelligences so that it will improve their health and adaptation in life. Support is divided into two, external and internal support. External family support includes friends, work, neighbors, school, extended family, social groups, recreation groups, places of worship and health practitioners. Internal family support includes support from husband and wife, from siblings or support from children. (Nur Fita Romalasari1 2020)

Pregnancy myths related to psychology

Myth is a folk prose story that tells about something, and is considered to have really happened by the owner of the story or its adherents. The truth of a myth really needs to be

questioned. Examples of myths that develop in society, such as: during pregnancy do not eat shrimp because later the baby will not be born smoothly, only back and forth. Do not wrap a towel or scarf around your neck during pregnancy because this will cause the umbilical cord to twist in the baby, making it difficult to give birth. Pinning sharp objects such as scissors and nails on clothes or shallots and garlic will protect the fetus from "disturbances" by jinn or other spirits.

The process of internalizing pregnancy myths that occur from parents to children can be explained by Piaget's cognitive theory and information processing theory. so that belief in pregnancy myths causes symptoms of anxiety in the form of fear if they have not fully implemented recommendations from parents and affect the behavior of pregnant women, especially doctors/midwives. Many pregnant women believe in the truth of pregnancy myths and carry them out, but they do not know the causes of a myth and only do so that problems do not occur in their pregnancy. (Iffah, Nova Hasbani Prima Dewi 2020).

Employment status is less able to describe the mother's perception in responding to pregnancy myths. This is because many mothers who have higher education prefer to be housewives. In other words, employment status cannot describe the level of knowledge of pregnant women. Families with good economic conditions will easily meet all the necessities of life, both primary and tertiary needs.

Information and educational needs, the need for appropriate health services will be easier to obtain if individuals have a good income when compared to individuals who earn less. So that the better the economic conditions, it is hoped that individuals will prefer health services that are more real and can be accounted for.

High anxiety is caused because primigravida mothers have never experienced this condition before. Emotions that are unstable and easily influenced by other people or the surrounding environment are characteristic of anxious individuals. If these conditions continue, the individual will indirectly look for defense or coping mechanisms. If the individual's coping is maladaptive, then the individual tends to create wrong perceptions for the individual, for example by believing in pregnancy myths. (Iffah, Nova Hasbani Prima Dewi 2020).

Mother's knowledge about pregnancy and also knowledge of pregnant women about the

myths that exist in their area will influence the attitudes and behavior of these pregnant women. According to Notoatmojo, knowledge is a very important domain in the formation of one's actions, experience and research proves that behavior based on knowledge will be more lasting than behavior that is not based on knowledge. The behavior of pregnant women who have knowledge will be different from the behavior of pregnant women who do not have knowledge, including knowledge about the myths surrounding pregnancy.

The process of internalizing pregnancy myths that occur from parents to children can be explained by Piaget's cognitive theory and information processing theory. So belief in pregnancy myths creates symptoms of anxiety in the form of fear if they have not fully implemented the recommendations from their parents and affect the behavior of pregnant women, especially in choosing food. Many pregnant women believe in the truth of pregnancy myths and carry them out, but they do not know the causes of a myth and only do so that they are not cursed. Many pregnant women believe in the truth of pregnancy myths and carry them out. However, they do not know the reasons, goals, and nature of a myth. They only practice abstinence, believe, and trust so they don't get overwhelmed. Do not dare to be critical by asking parents about their intentions and goals because if they ask questions it is considered to be contradictory and disrespectful to parents. Beliefs like this often harm pregnant women and their fetuses. Nutritional intake is often neglected because of fear and anxiety in consuming certain foods that actually have high nutritional value. Great anxiety will also cause interference during childbirth. One of the urgencies of this research is to raise public awareness so they don't fully believe in myths before the truth can be proven. However, it also provides a valuable lesson that behind the myth of pregnancy has a philosophical value that is useful for people's lives. (Irmawati 2018).

4. CONCLUSION

From the 26 journals reviewed it can be concluded that the hormonal changes that occur during pregnancy are very complex and correlate with one another to support the growth and development of the fetus as well as the body's preparation for childbirth and breastfeeding. Understanding the physical and emotional

changes experienced by women during pregnancy is essential to support proper pregnancy care and management.

5. SUGGESTION

It is important to carry out more in-depth research to understand the mechanism of hormonal regulation during pregnancy and how these hormonal changes can affect the process of fetal growth and development, especially at the molecular and cellular levels.

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