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RESEARCH TRENDS IN HOME SCIENCE AND EXTENSION

Volume - 4

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Chapter - 4

Care During Pregnancy: A Review

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Chapter - 4

Care During Pregnancy: A Review

Poonam Yadav, Poonam Malik and Samanta Bishnoi

Abstract

Pregnancy is the time period in which a woman brings a new life that progress from one generation to the next one. It is the most important and crucial life stage as it needs more care and protection. Care during pregnancy depends on many aspects such as nutrition and diet, clothing, personal hygiene, exercise, physiological and psychological changes. All these factors are responsible for healthy pregnancy outcomes. Complete knowledge of all these aspects can help a woman in the best way. Many studies found that economic status, lack of knowledge and general health of the women affects too much during maternity. Further studies needs to be conducted in the respective field so that some beneficial outcomes can be achieved. Policy makers should be more focused on rural, migrant or illiterate women as these women are the most sufferers. These studies can help government to further investigate the problems and its root cause so that it can be uprooted as soon as possible.

Keywords: care, health, knowledge, nutrition, pregnancy

Introduction

According to www.pregnancy.wiki.com, pregnancy is the period of gestation which starts with the conception through development of the fetus and lasts till birth. Gestation period of a normal woman is 9 months or 40 weeks or 280 days. It is the very crucial period in a woman's' life due to many physical, psychological and emotional changes. Multiple pregnancies have more than one offspring or fetus such as twins or triplets. Pregnancy usually occurs with sexual intercourse but now-a-days fertilization of an egg and sperm can be done using various technologies outside the woman's body. A pregnant mother may have live birth, sudden miscarriage, stillbirth or an abortion. Signs and symptoms of pregnancy may include nausea, vomiting, frequent urination, and change in appetite, missed periods etc. Normal gestation period has three trimesters, first one has conception and

maximum chances of miscarriage, second trimester has movement of the baby and growth of his different body parts, third or last trimester is known for birth of the baby.

As per www.parental.care.wiki.com, prenatal care or Antenatal care is defined as the health care provided to expectant mothers by family members or midwives during her entire pregnancy. Care during pregnancy is important for the proper growth and development of the baby. Prenatal care helps to reduce or prevent adverse outcomes during whole pregnancy. Poor antenatal care leads to low birth weight babies, pre-mature babies, neonatal mortality, delivery complications etc. It is also effective in reducing maternal morbidity rate which occurs due to poor health, unhygienic environment, under-nutrition and lack of medical facilities. Pre-natal care should be focused on following points to have healthiest pregnancy possible:

1. Nutrition and diet
2. Clothing
3. Immunization
4. Personal hygiene
5. Physical exercise
6. General complications
7. Physiological changes
8. Psychological changes

1. Nutrition and diet

According to www.pregnancy-diet.html, nutrition is the science which includes all nutrients and other substances in food items for the proper growth, maintenance and development. A proper diet or balanced diet consists of all food groups having essential nutrients for the growth and development of body. A pregnant woman needs all nutrients in extra amount during gestation like calcium, iron, vitamins, protein, folic acid etc.

Folic acid

Folic acid is also known as folate which is found in the form of vitamin B in food items. It is essential to prevent neural tube defects i.e. defects in baby's brain and spinal cord. Woman who wants to conceive are always advised to take 400 micrograms/per day extra folic acid before one month of conceiving. Pregnant woman are suggested to take folic acid tablets daily with an amount of 600 micrograms. Sources of folic acid are green leafy vegetables, beans, citrus fruits, cereals etc.

Calcium

Calcium is used in forming baby's teeth, bones, nails etc. A normal pregnant woman need around 1000mg/ day from her diet as well as supplements. If woman doesn't consume this amount of calcium then baby starts to take it from mother's bones and teeth to meet extra demands of calcium which then leads to weak bones and teeth, osteoporosis. Food sources of calcium are milk, yoghurt, cheese, some green leafy vegetables etc.

Iron

A normal expectant mother needs iron with an amount of 27mg/ per day (According to RDA of pregnant women). It helps to supply oxygen through blood cells to the baby and different body parts. Low levels of iron leads to iron deficiency anemia which causes weakness, certain infections, tiredness etc. For the better absorption of iron, it is advised to take vitamin C along with iron rich foods, for instance, orange juice with fortified cereals in breakfast. Sources of iron are meat, poultry, fish, beans and iron-fortified cereals.

Protein

Recommended protein intake during pregnancy is 60g/day. It is a very essential macronutrient because it helps to build body tissues of baby which then leads to growth of the fetus. It is also known as body building nutrient. Sources of protein are meat, poultry, fish, eggs, beans, cereals, pulses etc.

Foods to eat during pregnancy

Certain food items should be taken in a proper amount during whole pregnancy like fruits and vegetables, whole grains, lean protein and dairy products. All these food items constitute a balanced diet which is required for proper growth and development.

Foods to limit or avoid during pregnancy

Caffeine and fish are some of the food item which is advised to limit during pregnancy as these are harmful for the baby and results into miscarriage or preterm birth. Also some foods are advised to completely restrict such as alcohol, unpasteurized foods, raw meat, fish with higher levels of mercury etc.

According to Maqbool M, *et al.* in 2019, pregnant women should take extra diet to meet the needs of growing fetus rich in all food groups. One of the most important physiological changes during maternity is weight gain.

To prevent the depletion of mother's body stores of nutrients, she should take extra diet to full the demands of baby for the proper growth and development. Adequate maternal nutrition has its great importance in fetal growth, pregnancy outcomes and safe childbirth and in 2019, Forbes LE, *et al.* revealed that change in diet in a very challenging task for the women to achieve during pregnancy. If they feel anything harmful during pregnancy then they reduce its intake in their diet but it is quite difficult for them to add something good according to pregnancy diet chart. Despite these changes, they also make frequent changes to diet in case of nausea and vomiting.

According to a study by Lim ZX, *et al.* in 2018 nutrition related knowledge of the prenatal mothers was not so good. Therefore, it is necessary to give them adequate information about nutrition intake during pregnancy which may result into mother and baby health outcomes. This study revealed that occupation of the family, monthly income or financial status of the family may found to be associated factor in lack of nutrition knowledge. On the other hand, in 2019 Nada M, *et al.* revealed that nutrition is an important key element for the women during pregnancy because numerous metabolic, hormonal, psychological and physiological changes take place in her body. It is required for the good health of mother and fetus in her womb, normal birth, protects from many defects etc. She must have a good diet including all food groups to prevent excessive weight gain or loss, anemia.

2. Clothing

According to www.parenting.firstcry.com/articles/what-are-the-right-clothes-to-wear-when-pregnant.com, pregnant women do all those things which will make them comfortable. Wearing comfortable clothes is not a luxury but a necessity in today's times. Maternity clothing is one of the top most priorities for a healthy and safe pregnancy. During this time, body changes very rapidly so she should prefer appropriate clothes for the growing fetus. At the time of pregnancy, woman's body is on the high alert or risk because of some hormonal changes, psychological changes therefore, to prevent skin allergies or rashes, she should wear clothes made of smooth fabrics.

Most of the pregnant women usually feel too hot in summers and too cold in winters, so during summers she should wear cotton clothes because it absorbs sweat and keeps body cooler and woolen clothes in winters to keep body warmer. Having tight or fitted clothes can cause improper breathing, heartburn or indigestion and results into nausea and vomiting. Wearing loose

and soft clothes during nights help her in sound sleep and prepare body for normal delivery in the last trimester. Maternity clothes should have following properties:

- Try to use natural fabrics or avoid synthetic fabrics to keep body at the comfortable zone
- She should wear clothes which provide support to baby bump or back. For instance, belly belts are used to prevent backache
- Neat and clean clothes help her to prevent from any type of infection
- Always choose clothes with elastics, but make sure that shouldn't be too tight
- Try to have loose, light weight and easy to wear clothes like gowns, mexi dresses, t-shirts etc.

Quintero Rodriguez C and Troynikov O in 2019, conducted a study on maternity support garments and concluded that wearing MSGs during pregnancy is effective in reducing lower back pain (LBP), pelvic girdle pain (PGP), improving functionality and mobility, reducing the risk of being fallen. While in 2017, Sarkar J, Rasel S, revealed that pregnancy is the period of drastic changes in women both psychologically and physiologically. They tend to wear comfortable clothes during different stages of pregnancy instead of expensive clothes because normal clothes are uncomfortable. During these days, full fitted clothes should be avoided and always go for loose clothes as every stage of pregnancy is not same.

A research-based study was conducted by Sohn M and Bye E in 2015 to analyze the clothing functions of maternity wear. Their results showed that pregnant women usually prefer maternity clothes for their comfort zone instead of camouflage. They also concluded that pregnant women were satisfied with their body image and manage themselves to cope-up with body changes. In 2008 Ho SS, *et al.* concluded that comfort needs of pregnant women and the effects of different types of garments are helpful in designing maternity support garments. It is helpful in reducing lower back pain by providing support or strength to backbone. Maternity support garment is very convenient to use and safe to stabilize the spinal cord and to relieve backache.

3. Immunization

According to www.parents.com/pregnancy/my-body/pregnancy-health/pregnancy-vaccines.com, maternal immunization is very crucial key

factor in pregnancy as it protects both mother and the fetus from various diseases or infections during or after pregnancy. During pregnancy one vaccine can help two individuals simultaneously.

Vaccine against influenza: Pregnant women are usually at increased risk of having serious illness so, it is always recommended to have influenza vaccination during pregnancy to avoid any type of serious complications. Vaccination of a pregnant woman not only helps mother but also unborn baby. Some studies have concluded that vaccine decreases influenza morbidity of infants by about 63% up to 6 months.

Vaccine against Tetanus/Diphtheria/Pertussis shot (Tdap): Vaccination against Tdap should be received by the pregnant women nearly at 27-36th week of gestation in every pregnancy. Severe complications of pneumonia and inflammation of brain is the resultant of this disease who won't get vaccinated.

Hepatitis B: It is a viral infection which causes inflammation, nausea, fatigue and jaundice. In some of the severe cases it may cause liver cancer and ultimately death. Pregnant women having this disease can pass the infection to her baby during delivery so it is advised to get the mother vaccinated.

Hepatitis A: This vaccine protects the baby from liver diseases which spreads through contamination of food and water. Symptoms of this disease are fever, nausea or fatigue. Usually it doesn't affect the unborn baby but in rare cases, it may result into premature baby and infection.

In 2019, Zimmermann P, *et al.* said that immunization during pregnancy protects the baby from various infections or diseases in the first few months of his life during infancy and Ohfuji S, *et al.* in 2020, found that women with influenza vaccine during pregnancy didn't have negative or adverse birth effects in spite of that trimester in which it was given, in comparison to women with no vaccination at all.

Performance of influenza and pertussis vaccine has high acceptance among the population due to positive attitude of doctors or nurses who recommended the vaccination. Results of their study concluded that gynecologist's confidence at the time of recommending the vaccine has a powerful effect on expecting parents. They should keep maternity record for reminder of the vaccination for both the gynecologist and patient (Böhm S, *et al.* 2019). According to Jones CE, *et al.* in 2018, maternal immunization field is rapidly growing. The evidence for safety, immunogenicity and vaccine effectiveness during maternity is also increasing. Apart from these

challenges, immunization during pregnancy has a crucial role in protecting pregnant mothers, unborn babies or infants after pregnancy.

4. Personal hygiene

Personal hygiene is also an important aspect as nutrition and clothing during pregnancy. Starting from hand wash and keeping distance from dirty areas to keep her body and baby clean comes under personal hygiene. But these things can't cover all aspects of personal hygiene in antenatal care. Having unhygienic conditions makes mother and baby more prone to microorganisms and finally infections. (www.parenting.firstcry.com/articles/hygiene-during-pregnancy-why-it-is-important-and-tips-to-maintain.com).

Skin and hair hygiene: Skin and hairs are the very sensitive parts of body in pregnancy. Oil glands tend to secrete more oil which can be a cause to any infection. To keep them clean wash them properly and she should try cosmetics made of natural things to avoid any type of reaction.

Oral hygiene: Dental hygiene is important because mother's eating habits affects child as well. Change in estrogen levels make teeth sensitive and leads to swelling of gums, in that case doctor's advice is necessary. Pregnant women should brush her teeth at least twice a day.

Hygienic clothes: Clothes are the foremost important thing which comes directly in contact to mother. While choosing maternity clothes, she should go for the ones which has antibacterial properties and can be easily washed with detergents.

Personal hygiene: Pregnant women should take care of her body and intimate regions clean to inhibit growth of microorganisms. They should prefer natural soaps to keep vaginal area clean and helps to keep a balanced pH.

Breast care: As mother have to keep her baby very close to breast while feeding after delivery, she should keep her breasts hygienic and washed properly with water.

Shabbir S, *et al.* in 2015 revealed that there is a strong need of giving oral hygiene education to expectant mothers with antenatal care education to make both mother's as well as baby's good oral health. However, there knowledge of good oral health didn't affect their daily practices in maintaining dental care. In 2018, Naorungroj S, *et al.* revealed that maximum Muslim Thai pregnant women had fair dental hygiene. They had low self-care for oral hygiene and in fact, they didn't have proper knowledge

about how to take care of dental hygiene. Results of a study by Gambhir RS, *et al.* in 2015 revealed same output as earlier that most of the women had poor knowledge regarding oral hygiene during maternity. They concluded that there is an urgent need to motivate and to acknowledge them about personal hygiene to pregnant mothers through campaigns and intervention programs.

In 2013, American College of Obstetricians and Gynecologists concluded that having a good oral hygiene during gestation helps women to protect themselves from cardiovascular diseases, diabetes and many other disorders. Women from poor background were found least in receiving oral or dental care due to their low economic status. It was suggested with the findings that expectant mothers should be counseled time to time to reduce dental risks at an early stage.

5. Physical exercise

Physical exercise during pregnancy maintains or improves body's maintenance and wellbeing. It prepares the body for labor and delivery. Exercise during maternity helps to build stamina, muscle tone and body strength. It also tends to reduce legs and back pain; stretches body, good blood circulation, and relieve stress and tension. Even if a woman didn't experience it before pregnancy, still she should try moderate-intensity physical exercise. (www.americanpregnancy.org/pregnancy-health/exercise-during-pregnancy.com)

Benefits of exercise during pregnancy

- Reduces back pain, swelling, bloating, constipation during entire pregnancy period
- Prepares body for labor pain and delivery
- Helps to prevent or reduce gestational diabetes
- Enrich the body with energy and enthusiasm
- Good sleep, healthy body posture, muscle tone, and body strength can also be achieved with the help of exercise

Rezaeyan M, *et al.* in 2016, showed that physical exercise is an important part of pregnancy. Their results concluded that educational classes on exercise had a significant positive effect on attitude of pregnant mothers and their performance. A study by Prather H, *et al.* in 2012 also concluded that physical exercise during pregnancy has a lot of positive health benefits. It was found in some studies also that physical activities during maternity

also helped infants. So, it is necessary for pregnant women to initiate or start exercise during healthy pregnancy.

Rodríguez-Blanque R, *et al.* in 2019 concluded that pregnant women who did water exercises or activities during gestation had a shorter duration of labor than the women who didn't. The difference was mainly noticed at the first and second stage of labor pain. In 2020, Gao Y, *et al.* also found that physical activity had a positive effect on reducing the risk of hypertension during gestation. She should be suggested as per individual complications and need of exercise. However, there is no evidence for the physical activity norms to prevent hypertension during whole gestation.

6. General complications

According to www.parenting.firstcry.com/articles/most-common-pregnancy-complications-to-watch-out-for.com general complications are defined as the health problems faced during pregnancy by both mother and baby. These problems can be experienced by the women who had not any disease before pregnancy. Women with earlier disease had more chances of having any complication during pregnancy. Those who have complications are on the high risk and require regular check-ups and monitoring. Some of the most common complications are as follows:

Miscarriage: It is defined as the instant loss of pregnancy in first 20 weeks of gestation period. Signs of miscarriage are blood spotting or bleeding from vagina due to any undefined reason. Almost 80% of the miscarriages occur within the first 3 months of gestation. Factors associated with miscarriages are age, life history or birth defects, drug abuse, smoking or drinking, cervical problems etc.

Premature labor and birth: When the baby is delivered before 37 weeks of gestation is termed as premature baby. About 1/3rd of the preterm birth are planned by the doctors due to any complication in the delivery or when the growth of the fetus is stopped, then C-section deliveries are suggested rather than normal ones.

Preeclampsia: It is the high-risk pregnancy complication occurs in about mid of the gestation or even upto 2 months after delivery also. Preeclampsia may result into high blood pressure and at last severe damage in brain, liver and kidney. This condition doesn't show any symptoms in some cases but can be life risky. Low level of blood flow from preeclampsia to uterus may result into low amniotic fluid, restricted growth and placental abruption. Symptoms may include nausea, vomiting, change in vision, severe headache, swelling in hands, feet and ankles etc.

Low amniotic fluid: Amniotic sac contains amniotic fluid which protects and support the fetus. It acts as a cushion for the fetus and maintains a suitable temperature and pressure of the umbilical cord. Usually, the amniotic fluid increases throughout the pregnancy but starts to decrease in the last month.

Ectopic pregnancy: Ectopic pregnancy occurs when the fertilized egg implants itself in the fallopian tube instead of uterus. It occurs when the fallopian tube has some blockage at the time of implantation. These are also known as tubal pregnancies. However, there is no implantation for these pregnancies and ultimately gets terminated.

Gestational diabetes: Gestational diabetes is the most common problem of women during pregnancy. Even a non-diabetic woman before pregnancy can also develop gestational diabetes. It occurs due to increase of sugar levels in blood during pregnancy and can also return to normal level after delivery. Almost 1/4th to half of the women has risk of developing type-2 diabetes after delivery having history of gestational diabetes.

Placenta previa: It is the condition in which the placenta is positioned at the lower side of uterus either next to the cervix or covering it. If it remains at the same position then that condition may be risky and can cause bleeding and other complications. In these types of conditions, deliveries are usually done with C-section. It occurs in the ratio of 1:200 deliveries.

Infections during pregnancy: Infection by any bacteria, parasite, virus or vaginal infection due to preterm birth can also lead to severe risks for mother and baby's health.

A study in 2016 by Biswas A, *et al.* concluded that rural community lacks knowledge of maternal complications. It can be reduced by reduction in barrier within our society as well as family. Knowledge of maternal complications can be disseminated by educating traditional midwives and doctors who tackle with the deliveries cases in rural areas. Results of a study by Mousumi G in 2015 also concluded that complications during pregnancy may result into delivery or labor complications. It was found that the women who receive Maternal Health Care Service tend to have low risk of having labor complications than those who didn't received. Therefore, it is necessary to provide Maternal Health Care Service to expectant mothers.

Bastola K, *et al.* conducted a study in 2020 and results of their study revealed that women of kurdish origin tend to develop more gestational diabetes than the other. Further studies with large sample are required to find the coping strategies in preventing type-2 diabetes in later life as a resultant

of gestational diabetes. More investigation is required to find a clear difference of maternal complications between general and migrant population. A clear relationship was found between obstetric complications and long-term effects on health of expectant mothers in a study by Neiger R in 2017. Women with adverse pregnancy outcomes can increase the risk of having long term cardiovascular and metabolic disorders after pregnancy. These disorders may be cardiovascular, inflammatory, metabolic or vascular in later life.

7. Psychological changes

As per www.ifwip.org/psychological-changes-during-pregnancy.com, pregnancy is the time period of certain psychological changes which help them in accepting and understanding the roles and duties of being parents. Pregnancy leads to fluctuation of thoughts and feelings. Emotional feelings of positive and negative attitude towards pregnancy fluctuate at this stage. Positive feelings show their happiness, excitement and enjoyment while negative feelings show their tension, worry and disbeliefs.

Pregnancy is the beginning of their transformation from couple to parenthood. During this stage, interaction between mother's body and mind starts.

- Psychological changes during first trimester results into fear and anxiety of loosing baby. Body changes don't appear during this period. These fears are natural at this time
- During second trimester of pregnancy, fear of losing their baby disappears, but due to physical changes in mother's body, her worries also continue to be there. One more negative thought of having defects in baby, labor and birth appears during this stage
- Third trimester is the onset of anxiety towards birth of the baby. Physiological changes at this time affect more and the fear of childbirth make mother more uncomfortable. Excitement of baby's arrival gives positive feelings

According to Cunha AD, *et al.* in 2017, women should take care of stress and anxiety and to cope-up with these conditions, expectant mothers should provide follow-up services to prevent psychological stress during pregnant and in 2014 Pieta B, *et al.* concluded that special attention should be given to women in pregnancy to avoid any situation which may result into negativity and finally mental illness. Emotions during pregnancy were found too variable in a very short period of time.

There is a significant relationship between stages of pregnancy and psychological wellbeing. Women in the last trimester were found to have good psychology and happier than the first and second trimester (Fagbenro DA, *et al.* 2018). While another study by Fahami F, *et al.* in same 2018, resulted a significant positive relationship between psychological wellbeing and body image satisfaction. By imparting knowledge on psychological wellbeing and training for body image satisfaction may result into positive attitude and good psychological health.

8. Physiological changes

Physiological changes during pregnancy are the most common due to changes in body with increase in size of fetus, hormonal changes, and increase in blood volume, weight gain. These body changes are expected during pregnancy.

- Body changes are natural and expected such as backache, weight gain and fluid retention. These changes are often uncomfortable but slightly normal as pregnancy progresses towards delivery.
- Weight gain is only the noticeable symptom which appears during pregnancy as the fetus size increases. It is important to gain normal weight during pregnancy for proper nourishment and diet. Exercising regularly and balanced diet is the only way to healthy pregnancy.
- Backache is one of the most uncomfortable body changes because it disturbs night sleep. To get rid of back pain, exercise and yoga is recommended to expectant mothers.
- Pregnancy is the most sensitive period of life; body retains more fluid at this time. Swelling of hands, feet, ankle occurs mainly. Wearing comfortable shoes, avoid standing for long hours is the prevention of this condition.
- Itching during pregnancy occurs on belly, back and breast by leaving marks on that body part after pregnancy. It should be avoided as possible or can use any anti stretch mark cream.

According to Ngene NC and Moodley J (2019), women should have proper knowledge of physiological changes which can help in maintaining hypertension occurring during pregnancy. In 2017, Motosko CC, *et al.* concluded that there is a no. of physiological changes that occur during pregnancy. Changes should be such that Obstetricians and Dermatologists must differentiate benign changes and pathologic changes.

Physiological changes are important part of pregnancy as it nurtures the fetus developing inside mother's body and prepares her for labor and delivery. Some changes are due to biochemical reasons while remaining are due to pathological diseases (Soma-Pillay P, *et al.* 2016). In 2014, Moya J, *et al.* revealed that many physiological changes occur during pregnancy in women's body organs. Increase in blood volume, weight gain, belly size all happens to fulfill the demands of fetus. These changes occur due to increased nutritional demands of fetus and mother.

Conclusion

Pregnancy is the time period where a woman faces a lot of changes in her body. This phase of life requires more attention and care as it is the most critical stage. Studies in this area conclude that there is more need to be focused on knowledge regarding maternity, nutrition, personal hygiene. It was found that income of the family and lack of knowledge affects the most. Most of the studies are from foreign background that doesn't suits to Indian context, so it's an urgent need to further investigate it to reduce mortality rate. Findings suggest that it is necessary to give trainings and organizing intervention programs for needy women.

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