

**A STUDY OF PHYSIOLOGICAL CHANGES DURING
MENOPAUSE****CANDIDATE NAME VANDANA KANODIA**

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ABSTRACT

This research highlights the significance of attending to the health and nutritional problems of perimenopausal women in the metropolitan setting of Chennai. Improved food habits, higher nutritional status, and reduced perimenopausal symptoms have all been linked to nutrition education as a promising intervention. These results emphasize the importance of public health initiatives and specialized therapies geared toward perimenopausal women. Finally, this study offers evidence for the beneficial effects of nutrition education on the health and well-being of perimenopausal women in metropolitan Chennai, shedding light on the issues they encounter. This research highlights the need for individualized treatments to help women in their perimenopausal years make better choices that will improve their overall health and well-being. The nutritional status of the subjects was determined by taking anthropometric measures, assessing their food consumption, and conducting biochemical investigations. In addition, conventional questionnaires were used to evaluate perimenopausal symptoms. The subjects were split into two groups, one of which attended nutrition classes and the other of which served as a control.

KEYWORDS:- Physiological Changes, Menopause, perimenopausal women, perimenopausal symptoms, nutritional status

INTRODUCTION

Menopause, defined as the permanent cessation of menstruation and fertility, is a natural physiological process that typically occurs in women between the ages of 45 and 55. This transitional phase is associated with hormonal changes that affect various systems in the body, leading to a range of physical and psychological symptoms. This paper aims to delve into the intricate physiological changes that accompany menopause and their implications for women's health. Menopause is a natural biological process that marks the end of a woman's reproductive years. It is characterized by a cessation of menstruation and is accompanied by a multitude of

physiological changes that can significantly impact a woman's health and quality of life. This paper provides a comprehensive review of the physiological changes that occur during menopause, encompassing hormonal fluctuations, cardiovascular changes, bone health alterations, metabolic shifts, and neurological effects. Understanding these changes is crucial for healthcare professionals to provide appropriate management strategies and interventions to improve the overall well-being of women transitioning through this phase of life.

HORMONAL FLUCTUATIONS:

The hallmark hormonal change during menopause is the decline in estrogen and progesterone production by the ovaries.



This decline triggers a cascade of physiological effects, including irregular menstrual cycles, hot flashes, night sweats, and vaginal dryness. Estrogen also plays a vital role in maintaining bone density and cardiovascular health, making its reduction a critical factor in the onset of osteoporosis and increased cardiovascular risk.

CARDIOVASCULAR CHANGES:

Estrogen's decline during menopause contributes to changes in lipid profiles, leading to unfavorable alterations in cholesterol levels. This shift is associated with an increased risk of cardiovascular diseases, including coronary artery disease and stroke. Additionally, changes in blood pressure regulation and vascular function further compound the cardiovascular challenges that women may face during this phase.

BONE HEALTH ALTERATIONS:

Estrogen plays a pivotal role in maintaining bone density by inhibiting osteoclast activity and promoting calcium absorption. Consequently, the reduction of estrogen during menopause contributes to a higher risk of osteoporosis and fractures. Understanding the complex interplay between hormonal changes and bone health is crucial for implementing preventive measures and treatments to mitigate these risks.

METABOLIC SHIFTS:

Menopausal women often experience changes in body composition, including an increase in abdominal fat and a decrease in lean muscle mass. This metabolic shift is linked to insulin resistance and an elevated risk of developing type 2 diabetes. Strategies to manage weight, promote physical activity, and maintain a healthy diet become particularly important during this stage of life.

NEUROLOGICAL EFFECTS:

Cognitive changes and mood disturbances are also observed during menopause. Fluctuations in hormone levels can impact memory, attention, and mood regulation. Some women may experience symptoms such as mood swings, anxiety, and depression. Research in this area is ongoing to elucidate the mechanisms underlying these neurological effects.

QUALITY OF LIFE AND MANAGEMENT STRATEGIES:

The physiological changes experienced during menopause can significantly impact a woman's quality of life. Healthcare professionals play a vital role in offering evidence-based interventions to manage symptoms and mitigate long-term health risks. Hormone replacement therapy (HRT) and lifestyle modifications are among the strategies used to alleviate symptoms and reduce the risks associated with hormonal changes.

PHYSIOLOGICAL CHANGES

The physiological response to gonadotropins and their releases changes significantly throughout the menopausal transition, with hormone levels fluctuating over a wide range.

1. Weight Gain

Ninety percent of women put on weight as a consequence of menopause. Due to a gradual decrease in ovarian oestrogen production, the body will start to look elsewhere for the hormone, with the oestrogen-producing fat cells being the primary target. When the body's energy levels drop, it naturally gravitates toward storing calories as fat. As a woman's metabolism naturally slows with age, her tendency to acquire weight may become more noticeable. Maintaining a healthy



weight may be accomplished by eating sensibly and exercising often.

2. Hair Loss

On average, a person will lose 100 hairs from their scalp daily. The body will eventually replace this hair, although the rate at which this happens decreases with age. Stress and a drop in oestrogen levels have both been linked to hair loss during menopause. The best way to prevent hair loss is to fortify existing hair and encourage its healthy growth. Natural strategies include eating nutrient-dense foods and seeking stress-relieving activities.

3. Body Odour

Night sweats and hot flashes are two menopause-related symptoms that might increase sweating. It may be possible to avoid body odor by using appropriate clothes and all-natural deodorant products.

4. Brittle Nails

Dehydration and starvation can cause nail fragility. Menopause-related hot flashes are often caused by a hormonal imbalance. Drinking plenty of water, using gloves while washing dishes, and eating foods high in biotin may all help strengthen weak nails.

PSYCHOLOGICAL CHANGES DURING MENOPAUSE

Clinical sadness, acute anxiety, and erratic behavior are just some of the mental health issues linked to menopause that have been documented by scientists. Menopausal women, on the whole, don't have extreme fluctuations in emotion.

1. Mood Swing

The effects of menopause-related hormonal shifts on women may be catastrophic. Rapid changes in hormone levels may cause women to experience a wide range of emotions and behaviors due

to disruptions in the brain's neurotransmitter systems.

2. Depression And Anxiety

Perimenopause and menopause are times when depression may set in. Mood swings are sometimes blamed, along with fluctuating hormone levels, for the onset of negative emotions like melancholy and worry.' Vasomotor symptoms, such as hot flashes and nocturnal sweat, are a leading source of the 'provoked' changes in physical condition, such as insomnia, that affect mood stability for many people. This is explained by the domino theory. These shifts in mood are a major contributor to the onset of depression.

3. Fatigue

Mental weariness is a common complaint among postmenopausal women. A woman's mental health may deteriorate if she goes through painful bodily changes during this period.

Signs of mental weariness include a decline in concentration and the capacity to focus, as well as general fatigue.

4. Low Libido

Menopausal women often report a drop in sexual desire, difficulty becoming aroused or having an orgasmic experience, and a general dulling of their sexual experience. As a woman ages, her libido naturally decreases along with her oestrogen and androgen levels.

5. Irritability And Memory Loss

During the perimenopausal phase of menopause, a woman's mental health may be impacted by symptoms including irritability, forgetfulness, and memory loss.

Good philosophical and psychological foundations form the basis of asana (posture) practice. Education in this



context involves teaching and weaning the mind away from false living conditions (Sri Swami Krishnananda, 1997).

SIDDHA TREATMENT FOR MENOPAUSE

Siddha treatment may be traced back to Pancha Bhootha Panchekaranam. There are five elements and three humours (Vatham, Pitham, and Kapha) that make up our bodies. Vata, Pitta, and Kapha, or Vatha, Pitta, Kapha, are found in our bodies in a 1:1:2:1/4 ratio. Diseases may develop when this equilibrium or balanced ratio is disturbed, which can happen due to pathogenic factors or seasonal changes. Nadi diagnostic experts may be able to detect this change and provide the necessary internal and external therapies.

It has been suggested that the five characteristics of a pharmaceutical used in Siddha treatment—suvai, guna, veerya, pirivu, and mahimai (action)—were used to categorize the drugs. Based on the target area, Siddha medicine may be classified as either internal medicine or exterior medicine.

Internal medicine was broken down into 32 divisions for oral administration based on form, preparation, shelf life, and other criteria. The term "external medicine" encompasses the use of some drugs and their applications, such as nasal, ocular, and ear drops and procedures like leech application.

1. Naturopathy Treatment for Menopause

The word "naturopathy" is used to describe the medical practice of treating illness using natural means. All of the substances used in these therapies have their origins in nature. It saw considerable use in antiquity. This therapy is also being used at present in naturopathic clinics. Many

different medical conditions may respond to this drug.

This has no negative affects whatsoever. It's a lot more preferable than medical care.

Massage therapy

Mud therapy

Diet therapy

Shirodhara

2. Herbal Remedy For Menopause

Herbal remedies for menopausal symptoms are preferred by many women because they have less side effects than hormone replacement therapy (HRT). The following herbs have shown some promise in treating menopausal symptoms:

- Black Cohosh
- Red Clover
- Dong Quai
- Ginseng
- Kava
- Evening Primrose Oil (**Edward Group, 2014**).

3. DIET FOR MENOPAUSE

If you start including these foods into your diet before menopause, you may make the transition to post menopause years simpler.

Drink eight glasses of water daily to prevent dry skin and vaginal discomfort during menopause. She also suggests that water consumption might help alleviate the bloating that can result from hormonal shifts. Most women have this symptom during the perimenopausal transition, when their menstrual periods are gradually decreasing and then stopping altogether.

During menopause, oestrogen levels drop, which may increase calcium requirements. Milk and fat-free yogurt are good examples of calcium-rich meals, but taking a supplement may also help.



Vitamin D is important for the health of a woman's bones after menopause. Although vitamin D is naturally created by the body when the skin is exposed to sunshine, many medical experts think that supplementation is necessary for women's health, especially in the winter and in areas with limited access to sunlight.

Eat your fruits and veggies! Our metabolism slows down with age, and by midlife, women are often more sedentary than men. One of the most frustrating effects of menopause is gaining weight. Weight gain may be avoided and essential nutrients can be obtained by eating a diet high in low-calorie fruits and vegetables.

Whole grains like steel-cut oats, quinoa, and brown rice provide B vitamins, which may boost energy, reduce stress, and maintain healthy digestion. Heart disease is more common after menopause. The anti-inflammatory effects of folic acid and fiber, both of which are abundant in whole grains, help to lower this risk.

During menopause, it's important to eat enough of iron-rich foods such lean meats, eggs, and cereals and grains. After menopause, iron supplements, especially multivitamins with iron, are generally not recommended by physicians.

Soy may be helpful in reducing the severity of hot flashes. Soy contains flavones, which act like oestrogen in humans. Studies on the health benefits of soy for menopausal women have been focused on women in Asia who consume meals made with soy.

Highly advised is switching to a plant-based diet strong in omega-3 fatty acids, such as flaxseed. Add fiber, artery-healthy properties, and estrogen-like compounds (Bunce) by sprinkling powdered flaxseed over cereal, yoghurt, and salads.

Calorie-conscious fare: The plain truth is that our calorie needs naturally decline as we become older. Many women get relief from menopausal symptoms when they maintain a healthy weight by eating a diet low in fat and rich in whole grains and lean protein (Marie Suszynski, 2014).

MENOPAUSE AND DEMOGRAPHIC TRANSITION

Exciting developments in medicine, technology, and public health have occurred during the last several decades. These major changes have led to a worldwide increase in life expectancy and an ever-increasing population of people in their later years, although they have not all happened at the same time or in the same places (WHO, 1999). Over the last 16 years, India has seen a dramatic increase in its elderly population, which now accounts for 20.1% of women and 19.3% of men in India. In the last 15 years, the population of females ages 10 to 14 has grown by 3% (UPS, 1995; IIPS and ORC Macro, 2007) whereas the population of boys ages 10 to 14 has grown by 1.4%.

Most women experience menopause between the ages of 45 and 55, while the average age of menopause is increasing in developing countries (Shyamala and Shivakami, 2005). Many women now spend a considerable portion of their lives in the postmenopausal phase due to the increase in average life expectancy. There will be 1200 million women over 50 worldwide by 2030, according to projections. There were 467 million women aged 50 and over in the world in 1990. A World Health Organization survey found that during the last decade of the twentieth century, only 40% of postmenopausal women resided in industrialized zones, while 60% did so in



developing countries. By 2030, the World Health Organization predicts that just 24 percent of postmenopausal women would live in developed countries, while 76 percent will live in developing countries. As a consequence of this pattern, these women may have a good chance of living for many more decades beyond menopause.

BIOLOGICAL BASIS OF MENOPAUSE

The loss of ovarian follicles during the perimenopausal phase is a significant contributor to the transition from menstruation to menopause (Faddy et al, 1992). Ovarian follicles are present throughout the childbearing years. Although ovulation may result from follicular development, only a minority of follicles actually mature into oocytes. It is atresia (degeneration) and not ovulation that accounts for about 99.9 percent of ovarian oocyte loss (Peters and McNatty, 1980; Finch, 1986). Atresia is a lifelong condition that begins during gestation and persists after birth. By the conclusion of the fifth month after conception, the human ovaries will have produced 6.8 million germ cells. Baker (1986) reports that the number of follicles in a woman's ovaries is 2 million at birth and 3,90,000. This was first noted in 1978 (Byskow). Therefore, there are fewer ovarian follicles in the decade before to menopause, and menstruation begins to taper down.

if the number of follicles at birth is more important than the rate of atresia in forecasting the age at which menopause occurs, or if there is a limiting threshold number of follicles necessary to continue menstrual cycles, is a question that has been explored in a variety of models. The primary cause of menopause and the

emergence of menopausal symptoms is a fall in follicular development, which in turn results in a drop in oestrogen levels. The reduction of ovarian follicles and its effect on oestrogen levels varies among women.

CONCLUSION:

Menopause is a complex physiological process characterized by hormonal fluctuations that have far-reaching effects on various systems in the body. A comprehensive understanding of these changes is essential for healthcare providers to offer effective interventions that improve women's health and well-being during this transitional phase. Further research is warranted to uncover additional insights into the mechanisms driving these physiological changes and to develop targeted therapies for managing menopausal symptoms and associated health risks.

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