

Mental Health- An Emotional Roller Coaster Around Menopause

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ABSTRACT

Menopausal mental health is a critical yet often overlooked aspect of a woman's overall well-being during the menopausal transition. Menopause, which typically occurs between the ages of 45 and 55, marks the end of a woman's reproductive years, characterized by a natural decline in estrogen and other hormones. This hormonal fluctuation can lead to various mental health challenges, including mood swings, anxiety, depression, and cognitive changes like memory lapses or difficulty concentrating.

Women may experience emotional turbulence during this period due to both biological and psychological factors. Physically, the drop in estrogen can influence the production of neurotransmitters like serotonin, which regulates mood. Psychologically, the changes associated with aging, such as shifts in identity, self-image, and social roles, may exacerbate feelings of stress or anxiety. Sleep disturbances, common during menopause, can also heighten mental health concerns, leading to fatigue and irritability.

Addressing menopausal mental health requires a comprehensive approach, including lifestyle modifications, counseling, and, in some cases, medical treatments like hormone replacement therapy (HRT). Mindfulness practices, physical activity, and a strong social support network can also help women navigate the emotional challenges of menopause. Raising awareness and reducing the stigma around mental health issues during menopause are essential to ensuring that women receive appropriate care and support during this significant life stage. By recognizing and addressing these challenges, women can maintain their mental health and overall quality of life during and after menopause.

Keywords: Menopause, Emotional, Wellbeing, Ageing, Psychology

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INTRODUCTION

The permanent cessation of menstruation, known as the "natural menopause," is defined retroactively after a woman has gone through a full year of amenorrhoea without any apparent pathological or physiological reasons. Normal women experience the menopause at a median age of 51.4 years, which is indicative of the total or almost complete depletion of ovarian follicles, hypoestrogenemia, and elevated follicle-stimulating hormone (FSH) concentrations.¹ Menopause occurring before the age of forty is seen as abnormal and is known as early ovarian failure, or primary ovarian insufficiency. The menopausal transition, also known as perimenopause, happens after the reproductive years but before menopause. The symptoms of perimenopause include hot flashes, irregular menstrual periods, and alterations in the endocrine system.²

Menopause symptoms often appear in most women four years prior to their last menstrual cycle. Up until roughly four years following a woman's last menstruation, symptoms persist. Menopause symptoms can persist in women for up to ten years prior to the actual onset of menopause. After their last cycle, about 10% of women have menopausal symptoms for up to 12 years. Menopause typically strikes women 51 years of age, though African, American and Latina women may experience it up to two years sooner on average.

A year after the end of the menstrual cycle is the menopause (retroactive definition). The time between an irregular menstrual cycle and the last menstrual period is known as the menopausal transition. Menopausal transition and the year following the last menstrual cycle are included in the perimenopause. The years that follow the last menstrual cycle are known as the post-menopause years. Menstruation stopping before the age of 40 is known as premature ovarian failure, sometimes known as "premature ovarian insufficiency."

STAGES OF MENOPAUSE

Menopause occurs in cyclical series involving four stages.³

Stage 1: Pre-menopause: This is the period of a woman's life that is fertile or reproductive, which lasts from the start of her first menstruation until the end of it. The age range covered by this phase is 20–45. The reproductive time is defined as this stage of a woman's life. Women can conceive, their ovaries are functioning normally, their menstrual periods are regular, and their bodies are experiencing sufficient and adequate levels of hormones.

Stage 2: Perimenopause refers to the time around menopause, which may last 2-10 years. Perimenopause usually refers to the two years before and after menopause. But it could be used for a wider time span. By presenting clear evidence of changes in

ovarian function using objective endocrine measurements, or observing changes in the menstrual period, we can use the term Perimenopause freely. Perimenopause is often marked by many symptoms, including hot flashes, mood swings, night sweats, vaginal dryness, trouble concentrating, and infertility. Depression often occurs around menopause, when in addition to hormonal changes, other factors such as cultural pressure, sudden recognition of aging, and sleeplessness are involved.

Stage 3: Menopause This stage refers to the last menstrual cycle, which is followed by the ovarian function and menstruation ceasing permanently. When a lady is menstruating for twelve months in a row, this stage is verified. While most women go through the menopause naturally, individuals may go through an artificial or early menopause. Age is the primary cause of the natural menopause, which follows a drop in the synthesis of progesterone and oestrogen. Artificial menopause typically occurs after a surgical procedure, such as an ovariectomy, radiation therapy to the pelvis, or a hysterectomy.

Stage 4: Post menopause: This phrase describes the time following a woman's final menstrual cycle. As a result of decreased hormone levels, heart disease and osteoporosis are among the new health issues associated with this stage.

EPIDEMIOLOGY

In the year 1990, about 25 million women reached menopause worldwide; projections claim that this number will double by the late 2020s. India has a larger population of menopausal women and around 130 million Indian women are expected to be in this age group by 2015.⁴ With the advent of modern medicine and advances in science and technology, there is an increase in life expectancy. Women are more likely to live for more than two decades after attaining menopause with estrogen deficiency. Some of the menopausal symptoms experienced by these females can be severe enough to affect the normal day to day life. Menopause related symptoms have been studied extensively in developed nations, but little data is available from developing countries, especially South East Asia.⁵ According to the research by Indian Menopause Society, there were about 65 million women over the age of 45 years in the year 2006 in India. Hence, menopausal health demands even higher priority in Indian scenario.⁶ Menopausal women are one of the vulnerable health groups but which are often neglected.

In general, women reach the natural menopause between the ages of 45 and 55. However, in India, various studies have indicated that the range of mean age at menopause appears to be less, between 41.9 and 49.4 years.⁷ In terms of menopause, the Indian National Family.

Health Survey 4th round (NFHS-4) conducted in 2015 -2016 revealed that approximately 17.5% of

married women in the 30-49 age group had reached menopause; an extremely similar finding of 18% was reported in the earlier NFHS round (NFHS-3, 2005-06).^{7,8}

According to studies, within the next few decades, there will probably be a significant increase in both the proportion and total number of Indian women who are 45 years of age and older. There were roughly 96 million women in India who were 45 years of age or older, according to the 2011 census. By 2026, this figure is predicted to have increased by over four times, reaching 401 million.⁹ Given that women in India can expect to live for thirty years after giving birth, they may have a postmenopausal period lasting roughly thirty years. The postmenopausal population will pose enormous problems to healthcare services in the future due to the numerous health hazards connected with this age group, including osteoporosis, heart disease, hypertension, and a general reduction in quality of life.^{10,11}

ETIOPATHOGENESIS

The quantity of ovarian follicles in women decreases with age. Over time, the ovary's granulosa cells also shrink. They are the primary producers of inhibin and oestradiol. Gonadotropins are inhibited by oestrogen and inhibin. The inhibitory effect is eliminated with a drop in oestrogen and inhibin, leading to an increase in the synthesis of luteinizing hormone (LH) and folic acid stimulating hormone (FSH).⁷ Because LH is excreted from the blood relatively quickly, FSH levels are often greater than LH levels. Decreases in

oestrogen levels cause the hypothalamic-pituitary-ovarian axis to become disrupted. Consequently, endometrial growth fails, resulting in erratic menstrual periods till the end.¹⁰

Primal follicle activation, maturation, and regression are the stages of ovarian senescence that start in utero. As one ages, the follicular phase of the menstrual cycle decreases (first seen during late reproductive stages of life). Early menopausal transition causes irregular menstrual periods because anterior pituitary gonadotropin levels fluctuate.⁸ The main cause of menopause is a decrease in inhibin B levels. reductions in the early onset of menopause. The anterior pituitary's normal role is to negatively restrict FSH secretion early in the menstrual cycle. Because the female's follicles are ageing or not working well, her levels of inhibin B decline as she gets older.⁹

Because the effect of inhibition has been removed, decreased inhibin B leads to higher FSH during the early cycle. Because FSH increases the number of recruited follicles in each cohort, the ovaries release oestradiol in response to elevated FSH. The total number of follicles has reduced, but because of elevated serum FSH and increased aromatase enzyme activity, oestradiol levels are still normal or high. Aromatase's job is to change testosterone into oestradiol.¹¹ During the luteal phase of the cycle, progesterone levels fall in tandem with a decrease in inhibin B. Oestradiol levels fall and the ovary becomes insensitive to significantly elevated FSH when all the follicles have been exhausted. LH keeps up its androgen-secreting stimulation.

Premenopausal HPG axis Anna Dul and Eric Wong

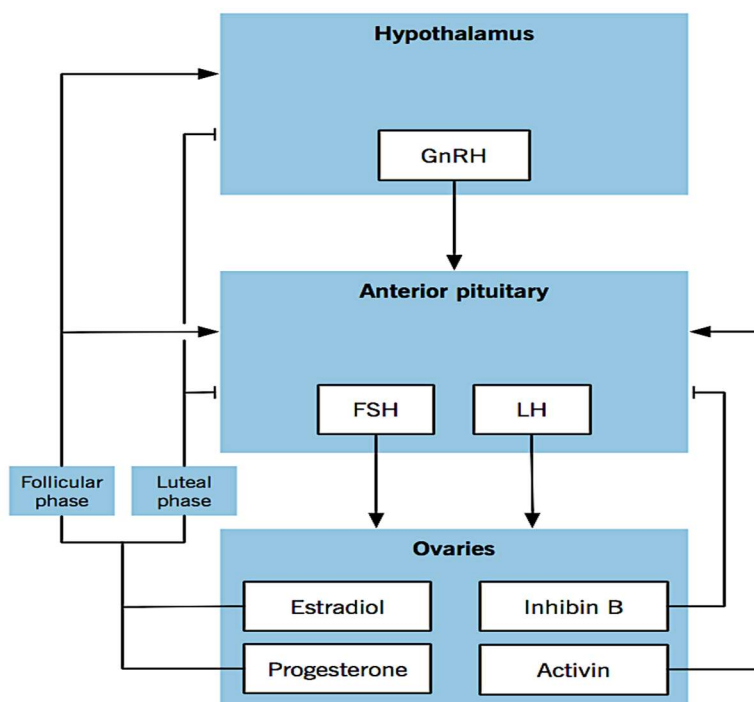


Figure 1: Hypothalamic Pituitary Gonadal (HPG) Axis¹²

Pathophysiology of menopausal transition

Eric Wong

Source: Principles of Gender-Specific Medicine, 2E

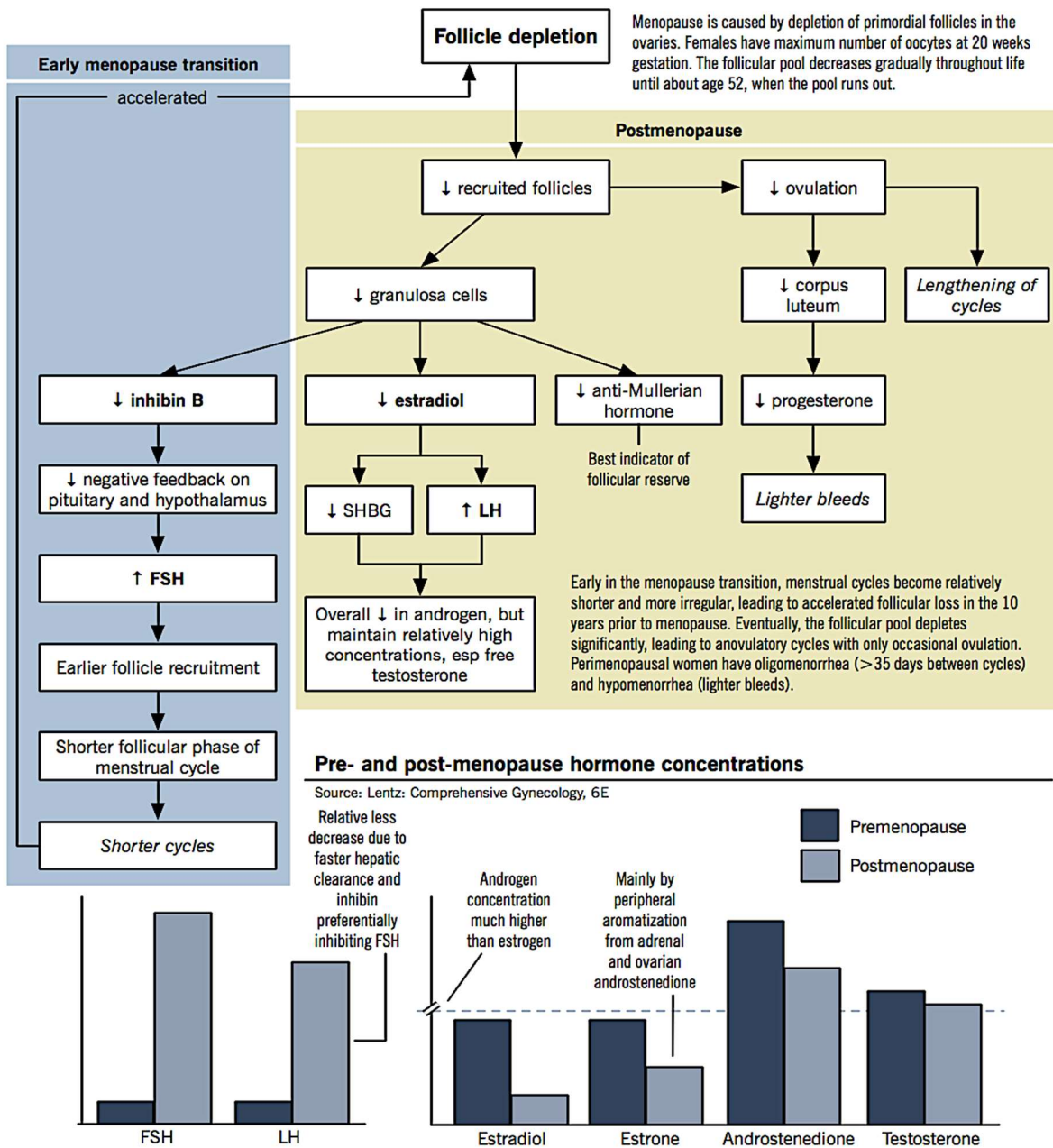


Figure 2: Menopausal transition - Pathophysiology¹²

Figure 1 shows the usual functioning of Hypothalamic Pituitary Gonadal (HPG) Axis in the premenopausal period.¹² Figure 2 depicts the pathophysiology of menopausal transition, hormone concentrations at pre- and post-menopausal periods of life.¹²

ICD-10 coding for menopause and related disorders

International Classification of Diseases (ICD) 10 version codes menopausal and female climacteric states under the chapter N95. Figure shows the ICD-10 coding for menopause and related disorders.¹³

PHYSICAL DIMENSIONS OF MENOPAUSE

Women differ in the kind and degree of feelings they claim to be menopausal symptoms. They are influenced by a number of variables, including female psychiatric variables, socioeconomic determinants, co-morbidities, and sex hormone levels. Hot flashes, sweating, irregular menstruation, sleep issues, and mental changes are among the early menopausal symptoms linked to ovarian oestrogen insufficiency and a progression in hormone production reduction. Subsequently, cardiovascular disorders, osteoporosis, urogenital atrophic alterations and associated sexual dysfunctions, muscle soreness, and joint com-

plaints manifest.¹⁴ Approximately 85% of women going through the menopause report having at least one menopausal symptom, which typically indicates the existence of vasomotor symptoms, sleep difficulties, or mental disorders.¹⁵ The presence of typical symptoms of menopause can be a cause of depressive disorders.

One typical sleep disturbance observed after menopause is insomnia, which is the most prevalent sign of depressive disorders. This includes sleep disturbances such as slow-wave sleep shortening, REM sleep abnormalities, early waking, which is linked to depressive disorders, and sleep problems, which are linked to anxiety disorders.¹⁶

Mood disorder episodes are frequently preceded by the appearance of depression in women during the climacteric period, according to several studies conducted worldwide on the subject of menopausal mental health disturbances.¹⁷ The pathophysiology of several illnesses closely linked to symptoms of depressed illness is related to oestrogen insufficiency during menopause. The neurotransmitter serotonin, which influences a woman's mental state, is activated in the brain by oestrogens. Follicle-stimulating hormone, testosterone, and oestradiol levels were compared, and their significance in the prevalence of depression during the climacteric period was noted.^{18,19}

According to the World Health Organisation (WHO), depressive disorders rank as the fourth most severe health issue globally in recent times. By 2020-2030, depression will overtake coronary heart disease as the second most common issue. It has been estimated that up to 70% of chronic illness cases have depressive disorders. Because of the considerable stigma, discrimination, and fear associated with it, many instances go undetected. Mental health illnesses continue to exist in society like an iceberg, with the majority of the submerged component of the iceberg consisting of undiagnosed instances. They are frequently identified as a component of osteoporosis or metabolic syndrome, which are conditions common in the menopausal age group.²⁰ Sexual dysfunction can also develop, and its hallmark symptoms include painful sexual encounters, libido issues, and vaginal inflammation. According to studies, around 60% of women going through menopause report having less libido, less sexual activity, and avoiding sexual activity.^{21,22}

PSYCHOLOGICAL DIMENSIONS OF MENOPAUSE

A woman's life cycle involves multiple times when her susceptibility to mental illness is heightened due to changes in her reproductive hormone levels and her circumstances. Women are almost twice as likely as males to experience depression at some point in their lives. The start of menarche marks the beginning of the increased risk of mental health issues.²³ Mood disorders can strike women both during and after pregnancy. Between 15 and 25 percent of women get postpartum depression. Women who are

older may have mood swings during the perimenopause. In the perimenopause, those with a history of depression are especially vulnerable.²⁴

A woman may have physiological changes in the years preceding menopause and during the transition phase. However, they also impact the mind, particularly mental well-being. Depression nearly doubles in frequency throughout this period. Women who have previously experienced anxiety or despair may report a return of symptoms. Mood swings at different phases of life can be brought on by variations in the levels of female hormones. It follows that their potential to influence mood during the menopausal transition is not surprising.²⁵

During the perimenopause and menopause, mood swings are frequently modest and tolerable. Hormone fluctuations have been directly associated with milder depressed symptoms. Numerous studies have found a connection between progesterone and oestradiol changes and an increase in depressive symptoms during the perimenopause. The overwhelming majority of women who have substantial mental health problems during and after menopause had experienced them in the past. Furthermore, women may experience several stressors at this age, including taking care of their ageing parents, working under pressure, and caring for their children. These factors may operate in concert to increase the prevalence of melancholy and anxiety.^{26,27}

The SWAN Study (Study of Women's Health Across the Nation) found that women's risk of experiencing depressive symptoms was greater both during and after the menopause transition.²⁸ A history of depression was the most powerful predictor among those examined. When compared to other factors such as vasomotor symptoms, a personal history of depression, significant life events, and changes in reproductive hormones, the influence of menopausal status on the likelihood of depression was found to be an independent predictor. According to two recent research, women who had never had depression before were more likely to experience depressive symptoms during the menopausal transition than during the premenopausal years.^{29,30} Depression manifested itself within the framework of the shifting hormonal landscape. Age at menopause is negatively correlated with postmenopausal depression risk, according to a new meta-analysis.³¹

Some of the factors associated with development of depressive symptoms in menopausal women are^{24,28,32} Young age at menopause, lower educational level, negative attitude about menopause, history of depression, sleep disturbances, vasomotor symptoms, surgical menopause, stressful events in life, marital concerns/conflicts.

Women who experience depressive symptoms before, during, and after menopause have distinct symptoms from those who do not. There may be variations in the symptoms' type and time period of onset. The luteal phase of the menstrual cycle is when

depression symptoms are most noticeable or worsen in premenopausal women, which supports the theory that these symptoms are related to hormonal fluctuations.³³ Hormonal alterations in perimenopausal women, however, are not just confined to the luteal phase. As a result, the symptoms might not exhibit the same cyclical pattern as premenopausal women. Depression in older women is mostly linked to signs of cognitive decline and poor cognitive performance.³⁴ The emotional or cognitive concerns could be hidden in this way.³⁵

Although studies have conclusively shown a connection between menopause and depression, the situation is different when it comes to anxiety in women going through menopause. Much little is known about anxiety during menopause. There is very little evidence that anxiety and panic attacks are more common in women before, during, and after menopause. An abrupt and intense feeling of fear is the hallmark of a panic attack, which can also include palpitations, perspiration, trembling in the limbs, and shortness of breath.^{12,25} Anxiety and depression can frequently coexist. Anxiety disorders, both newly diagnosed and pre-existing, can manifest at all stages of menopause, including the post-menopausal period.

This apparent link illustrates how hard it is to tell panic attacks from hot flashes. Women experience sweating, heat, and an increase in heart rate during panic attacks. Hot flashes are another instance of them. Some women may feel an "aura" before a hot flash; this term is typically used to describe a feeling that precedes a brain disorder such as migraines or seizures. For these ladies, a sensation of impending doom or terror precedes the hot flash. The primary characteristic that sets panic attacks apart from hot flashes is the inability to breathe.³⁶

The menstrual cycles of a woman can have a significant impact on her emotional and mental well-being. The mood swings and ups and downs that come with PMS and pregnancy are partially caused by fluctuating levels of the hormone's progesterone and oestrogen. These same hormones rise and fall throughout menopause, which frequently affects moods and may exacerbate anxiety symptoms that a woman already has. Following their discontinuation of hormone replacement therapy, some women report having more anxiety symptoms.³⁷

HORMONE REPLACEMENT THERAPY AND ALTERNATIVE THERAPIES

Hormone Replacement Therapy (HRT) which involves administering estrogen, sometimes in combination with progesterone, has been the mainstay treatment for addressing both physical and psychological symptoms of menopause. Several studies demonstrate that HRT improves mood and reduces the risk of depression in some women. A 2020 systematic review in *JAMA Psychiatry* found that women using estrogen therapy reported improvements in

mood and cognitive function, particularly when initiated early in the menopausal transition.³⁸ However, HRT is not without risks. The Women's Health Initiative (WHI) study from 2002 raised concerns about the long-term safety of HRT, linking it to an increased risk of breast cancer, cardiovascular disease, and stroke.³⁹ Though subsequent studies have clarified that risks vary by age, dosage, and type of hormones used, many women and healthcare providers remain cautious about HRT as a long-term solution, especially for mental health concerns.

Given the risks associated with HRT, there has been growing interest in non-hormonal therapies to manage both the physical and psychological symptoms of menopause. Cognitive-behavioral therapy (CBT) has been shown to help reduce anxiety, depression, and sleep problems in menopausal women.⁴⁰ A 2022 study systematic review published in *The Psychological Medicine* demonstrated that CBT specifically tailored for menopausal women significantly reduced psychological symptoms and improved quality of life. Selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) are also used as non-hormonal alternatives to manage mood disorders and hot flashes.⁴¹ Recent research suggests that SSRIs, such as paroxetine, can be effective in reducing both depression and vasomotor symptoms, though they may not be as beneficial for cognitive issues.⁴² Emerging evidence also supports the role of alternative therapies like mindfulness-based stress reduction (MBSR), acupuncture, and exercise in managing menopausal symptoms. A 2023 meta-analysis found that mindfulness practices significantly improved both mood and sleep quality in menopausal women, with similar findings for acupuncture.⁴³

Despite the availability of these treatments, many women do not find adequate relief from their menopausal symptoms. HRT may not be suitable for women with a history of certain cancers, cardiovascular issues, or those unwilling to risk the potential side effects. Non-hormonal therapies, while safer, do not always provide the same level of symptom relief, particularly for cognitive symptoms like memory loss.⁴⁴ Additionally, research in this area has often focused on short-term outcomes, with fewer studies examining the long-term efficacy and safety of both HRT and alternative treatments. Furthermore, there is a need for more personalized approaches that consider individual differences in symptom severity, health risks, and personal preferences.⁴⁵

Future research should focus on identifying effective non-hormonal treatments that specifically address menopause-related mental health issues. For instance, neuroprotective agents that influence neurotransmitter systems affected by estrogen decline could be explored.⁴⁶ Additionally, there is a need for more studies on the long-term mental health outcomes of non-hormonal therapies like CBT, SSRIs, and alternative interventions. Research into lifestyle factors such as diet, exercise, and stress management

could also reveal preventive strategies for menopausal mental health issues. Understanding the interplay between hormone levels, brain function, and mood may lead to more targeted treatments that do not rely solely on hormonal modulation.⁴⁷

CONCLUSION

Community participation and involvement is required in planning and implementation of various health talks and group discussions on menopausal health. Baseline information from this study can be used by the program managers to devise appropriate health policies for postmenopausal women and help them to lead a healthy life. More longitudinal and community-based studies are required to enhance the understanding of this less explored field of menopause and mental health.

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