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MENOPAUSE AS A PUBLIC HEALTH PRIORITY: CHALLENGES, HEALTH IMPACTS, AND STRATEGIES FOR HEALTHY AGING

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Abstract Menopause is a natural biological event characterized by the permanent cessation of menstruation resulting from the loss of ovarian follicular activity. Increasing life expectancy has led to women spending nearly one-third of their lives in the postmenopausal period, making menopause an important public health concern rather than merely a reproductive milestone. To review menopause from a public health perspective by examining its epidemiology, health impacts, challenges in healthcare delivery, and evidence-based strategies that promote healthy aging. A narrative review was conducted using evidence from international guidelines, policy documents, and peer-reviewed literature addressing menopause, healthy aging, women's health, and public health interventions. Menopause is associated with vasomotor symptoms, osteoporosis, cardiovascular disease, metabolic disorders, cognitive changes, genitourinary syndrome, and psychological distress, all of which contribute to reduced quality of life and increased healthcare utilization. Limited awareness, cultural stigma, inequitable access to healthcare, and inadequate menopause services remain major public health challenges, particularly in low- and middle-income countries. Comprehensive public health interventions focusing on health promotion, disease prevention, early diagnosis, and integrated healthcare services can substantially improve health outcomes among menopausal women. Menopause should be recognized as a major public health priority. Integrating menopause care into primary healthcare, strengthening health systems, promoting healthy lifestyles, and developing supportive public policies are essential to improve women's health and healthy aging worldwide .

Keywords: Menopause; Public Health; Healthy Aging; Women's Health; Health Promotion; Quality of Life.

Introduction Menopause is a universal physiological transition that marks the permanent cessation of menstruation following the depletion of ovarian follicular activity. Clinically, natural menopause is diagnosed retrospectively after twelve consecutive months of amenorrhea without any pathological or physiological cause (1,2). Although menopause represents a normal stage of reproductive aging, it is accompanied by profound endocrine, metabolic, and psychosocial changes that influence women's health throughout later life (2,4).

The global increase in life expectancy has transformed menopause into a major public health issue. Women currently live significantly longer than previous generations, resulting in approximately one-third of their lifespan being spent after menopause (2,3). Consequently, maintaining health during the postmenopausal years has become increasingly important for individuals, healthcare systems, and society. Healthy aging among women requires attention not only to symptom management but also to prevention of chronic diseases and preservation of functional independence (1,3).

Menopause is associated with a wide spectrum of health consequences. Declining estrogen levels contribute to vasomotor symptoms, sleep disturbances, mood disorders, osteoporosis,

cardiovascular disease, metabolic syndrome, cognitive changes, and genitourinary syndrome of menopause (4–8). These conditions adversely affect physical health, emotional well-being, work productivity, interpersonal relationships, and overall quality of life. Furthermore, many chronic diseases that emerge during midlife share common modifiable risk factors, providing opportunities for preventive public health interventions (5,9).

From a public health perspective, menopause should be considered a critical stage within the life-course approach to women's health. Integrating menopause care into primary healthcare enables early detection of osteoporosis, cardiovascular disease, diabetes, obesity, depression, and selected cancers while simultaneously promoting healthy behaviors that improve long-term outcomes (3,8).

The purpose of this review is to examine menopause as an emerging public health priority by discussing its epidemiology, major health impacts, and opportunities for evidence-based interventions that promote healthy aging across diverse populations.

Global Epidemiology of Menopause

Population aging is one of the defining demographic changes of the twenty-first century. Improvements in sanitation, nutrition, vaccination, and medical care have significantly increased life expectancy worldwide, resulting in a rapidly expanding population of middle-aged and older women (1,3). According to international estimates, more than one billion women are expected to be postmenopausal globally within the coming decade, with approximately 47 million women entering menopause annually (2,11).





The average age of natural menopause ranges between 45 and 55 years, with a global mean of approximately 50–51 years (2,4). However, considerable regional variation exists owing to differences in genetics, ethnicity, nutrition, reproductive history, smoking, body mass index, and socioeconomic status (4,9). Women in many low- and middle-income countries tend to experience menopause earlier than those in high-income countries, increasing their cumulative exposure to estrogen deficiency and related chronic diseases (9,11).

The prevalence and severity of menopausal symptoms also vary across populations. Vasomotor symptoms such as hot flushes and night sweats are commonly reported in Western countries, whereas musculoskeletal pain, fatigue, sleep disturbances, and somatic complaints are frequently emphasized in Asian and African populations (5,10). These variations likely reflect interactions among biological, environmental, dietary, cultural, and psychosocial factors.

Despite these demographic and epidemiological trends, menopause remains inadequately addressed within many national health policies. Public health initiatives often focus primarily on reproductive health during adolescence, pregnancy, and childbirth, with comparatively limited

emphasis on the health needs of midlife and older women (2,7). Structured menopause services, standardized clinical guidelines, trained healthcare providers, and community education programs remain insufficient in many regions, contributing to delayed diagnosis and under-treatment (7,10).

Recognizing menopause as a public health priority is therefore essential. Integrating menopause care into existing primary healthcare services, promoting healthy lifestyles, improving health literacy, and strengthening preventive screening programs can substantially improve women's health outcomes and contribute to healthy aging across populations (5,8).

Health Impacts of Menopause

Menopause is associated with estrogen deficiency, resulting in physiological changes that affect multiple organ systems. Although menopause is a natural transition, its symptoms and long-term complications can substantially impair quality of life and increase the burden of chronic diseases (4–8).

Vasomotor Symptoms; Vasomotor symptoms, including hot flushes and night sweats, are the most common manifestations of menopause, affecting approximately 60–80% of women (4,5). These symptoms frequently disturb sleep, reduce work productivity, and impair daily functioning. Persistent vasomotor symptoms have also been associated with an increased risk of cardiovascular disease and reduced quality of life (5,8).

Musculoskeletal and Bone Health; Declining estrogen accelerates bone resorption, leading to reduced bone mineral density and an increased risk of osteoporosis and fragility fractures (6,12). Osteoporotic fractures contribute significantly to disability, loss of independence, healthcare costs, and mortality among older women. Regular physical activity, adequate calcium and vitamin D intake, and timely osteoporosis screening are essential preventive measures (6,12).

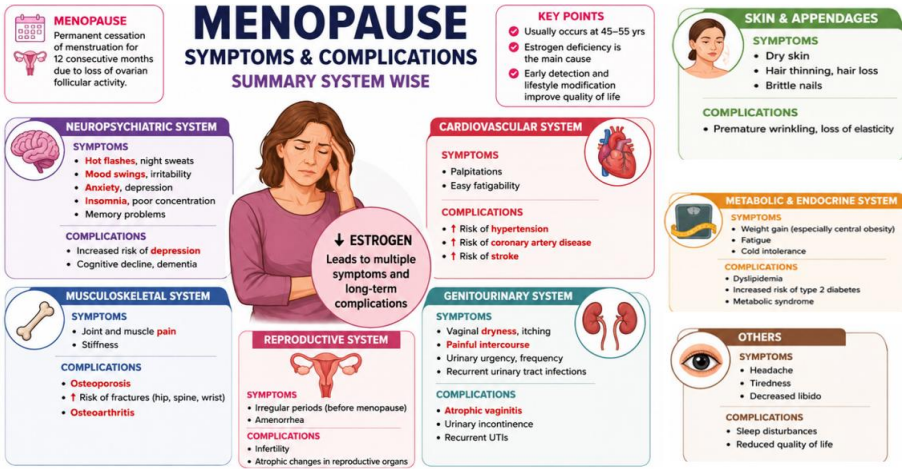
Cardiovascular and Metabolic Health; Cardiovascular disease is the leading cause of death among postmenopausal women (5,9). Estrogen deficiency is associated with adverse lipid changes, endothelial dysfunction, central obesity, insulin resistance, hypertension, and metabolic syndrome, thereby increasing cardiovascular risk. Lifestyle modification and regular cardiovascular risk assessment during midlife are therefore important public health interventions (5,9).

Genitourinary and Sexual Health; Many women experience genitourinary syndrome of menopause, characterized by vaginal dryness, dyspareunia, urinary urgency, recurrent urinary tract infections, and reduced sexual function (4,7). These symptoms often remain underreported because of embarrassment or lack of awareness, negatively affecting intimate relationships and psychological well-being (7).

Mental Health and Cognitive Well-being; Hormonal fluctuations during the menopausal transition may contribute to mood changes, anxiety, depressive symptoms, irritability, sleep disturbances, and memory complaints (4,8). Poor mental health can further reduce social participation, occupational performance, and overall quality of life. Early recognition and psychosocial support are therefore important components of menopause care (8).

Quality of Life; The cumulative effects of physical symptoms, chronic diseases, psychological distress, and sexual dysfunction may significantly reduce health-related quality of life among menopausal women (5,10). Comprehensive management should therefore focus not only on symptom relief but also on promoting healthy aging, functional independence, and psychosocial well-being.

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Public Health Challenges

Despite affecting millions of women worldwide, menopause remains an under-recognized public health issue. Several barriers limit access to appropriate menopause care and contribute to health inequalities (2,7).

Limited Awareness and Health Literacy; Many women consider menopausal symptoms to be an unavoidable consequence of aging and therefore do not seek medical advice (7,10). Limited public awareness regarding available treatments and preventive strategies often delays diagnosis and appropriate management.

Cultural Beliefs and Stigma; In many societies, menopause remains a sensitive or taboo topic. Cultural misconceptions and social stigma discourage open discussion, resulting in underreporting of symptoms and poor healthcare utilization (7,10).

Inadequate Healthcare Services; Dedicated menopause clinics and trained healthcare professionals are unavailable in many healthcare systems, particularly in low- and middle-income countries (2,11). Consequently, menopause-related symptoms are frequently overlooked during routine primary healthcare visits.

Health Inequalities; Socioeconomic status, educational level, geographical location, and access to healthcare influence menopausal experiences and health outcomes. Women living in rural or resource-limited settings often face greater barriers to screening, counseling, and specialized care (2,11).

Economic Burden; Untreated menopausal symptoms contribute to increased healthcare utilization, reduced workplace productivity, absenteeism, and decreased quality of life (5,8). As populations continue to age, the economic burden associated with menopause-related chronic diseases is expected to increase, emphasizing the need for preventive public health policies. Dedicated menopause clinics and trained healthcare professionals are unavailable in many healthcare systems, particularly in low- and middle-income countries (2,11). Consequently, menopause-related symptoms are frequently overlooked during routine primary healthcare visits.

Public Health Strategies for Healthy Aging

Effective menopause management requires a multidisciplinary public health approach that extends beyond symptom control. Integrating health promotion, disease prevention, early diagnosis, and equitable healthcare access can significantly improve the health and quality of life of menopausal women (1,3,5).

Health Promotion and Education; Health education empowers women to recognize menopausal symptoms, adopt healthy lifestyles, and seek timely medical care. Community

awareness campaigns, counseling services, and educational programs can reduce stigma and improve menopause-related health literacy (1,7). Promoting open discussions about menopause within families, workplaces, and communities is equally important.

Lifestyle Modification; Lifestyle interventions remain the cornerstone of healthy menopause. Regular physical activity, a balanced diet rich in calcium and vitamin D, weight management, smoking cessation, moderation of alcohol intake, stress reduction, and adequate sleep help alleviate menopausal symptoms while reducing the risk of cardiovascular disease, osteoporosis, obesity, and diabetes (5,6,9,12). These interventions should be encouraged throughout midlife as part of healthy aging programs.

Screening and Preventive Healthcare; The menopausal transition provides an ideal opportunity for preventive health assessment. Routine screening for hypertension, diabetes mellitus, dyslipidemia, osteoporosis, breast cancer, cervical cancer, and mental health disorders enables early detection and timely intervention (3,6,8). Risk assessment should be incorporated into primary healthcare services to reduce long-term morbidity and mortality.

Clinical Management; Management should be individualized according to symptom severity, medical history, and patient preferences. Menopausal hormone therapy remains the most effective treatment for moderate-to-severe vasomotor symptoms in appropriately selected women, while non-hormonal therapies may benefit those with contraindications or personal preference against hormone use (4,5). Psychological counseling, pelvic floor rehabilitation, and multidisciplinary care further enhance overall well-being.

Strengthening Health Systems and Policy; Healthcare systems should integrate menopause services into routine primary healthcare and healthy aging initiatives. Training healthcare professionals, developing evidence-based national guidelines, ensuring affordable access to essential medicines, and expanding specialized menopause clinics can improve the quality of care (1,2). Workplace policies that acknowledge menopause-related health needs may also enhance productivity and support women's participation in the workforce.

Future Directions

As the global population continues to age, menopause research and healthcare delivery must evolve to meet the changing needs of women. Future priorities include expanding research in low- and middle-income countries, improving culturally sensitive health education, strengthening digital health and telemedicine services, and incorporating menopause into national healthy aging and non-communicable disease programs (1,3). Greater collaboration among governments, healthcare professionals, researchers, and community organizations will be essential for reducing health inequalities and promoting healthy aging.

Conclusion Menopause is an important public health issue that affects women's physical, psychological, metabolic, and social well-being. With increasing life expectancy and population aging, addressing menopause has become essential for promoting healthy aging and reducing the burden of chronic diseases. Public health strategies—including health promotion, healthy lifestyle practices, preventive screening, equitable healthcare access, and evidence-based management—can improve health outcomes and quality of life. Integrating menopause care into primary healthcare should be a key priority to support healthy aging and enhance women's well-being across the life course.

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