PSYCHOLOGICAL DISTRESS AND SLEEP QUALITY INDEX AMONG MENOPAUSAL AND PREMENOPAUSAL WOMEN

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In partial fulfillment of the requirements for the award of the Degree of

Master of Science in Counselling Psychology

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CERTIFICATE

This is to certify that the dissertation titled "**Psychological Distress and Sleep Quality Index Among Menopausal and Premenopausal Women**" has been undertaken and completed by AHADA KABEER, Reg. No. 60423115003, under the supervision of Ms. Anila Daniel as part of the requirements for the fourth semester of the M.Sc. Counselling Psychology programme during the academic year 2023–2025 at Loyola College of Social Sciences, Sreekariyam, Thiruvananthapuram.

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DECLARATION

I, the undersigned, do hereby declare that this research work titled "**PSYCHOLOGICAL DISTRESS AND SLEEP QUALITY INDEX AMONG MENOPAUSAL AND PREMENOPAUSAL WOMEN**" was carried out in the Department of Counselling Psychology, Loyola College of Social Sciences, under the supervision of Ms. Anila Daniel, and submitted to the University of Kerala as a part of the partial fulfillment of the requirements for the Postgraduate Degree in Counselling Psychology for the academic year 2023–2025. This is a bonafide work and has not been submitted by me for the award of any other degree, diploma, title, or recognition previously.

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ABSTRACT

This study explores the relationship between psychological distress and sleep quality index among menopausal and premenopausal women and to explore whether significant differences exist between these two variables between these two groups. Using a quantitative research design, data were collected from 133 women (64 menopausal and 69 premenopausal) through offline administration of the Kessler Psychological Distress Scale (K10) and the Pittsburgh Sleep Quality Index (PSQI). The results showed significant differences between the two groups, with menopausal women reporting higher psychological distress ($M = 27.45$, $SD = 5.93$) and poorer sleep quality ($M = 6.67$, $SD = 2.43$) compared to premenopausal women ($M = 20.41$, $SD = 6.12$; $M = 3.80$, $SD = 2.01$). Spearman's rho correlation revealed a significant positive relationship between psychological distress and sleep quality index in both groups, among premenopausal women ($\rho = .472$, $p < .01$) and among menopausal women ($\rho = .347$, $p < .01$), indicating that higher levels of psychological distress are associated with poorer sleep quality. The study highlights the impact of psychological factors on sleep during the menopausal transition and emphasizes the need for mental health awareness and supportive interventions for women at this stage. Future research may focus on longitudinal changes and explore other psychological and lifestyle variables that influence well-being in midlife women.

Keywords: Psychological Distress, Sleep Quality Index, Menopause, Premenopause, Kessler Psychological Distress Scale(K10), Pittsburgh Sleep Quality Index (PSQI)

Psychological Distress and Sleep Quality Index Among Menopausal and Premenopausal women

CHAPTER I

INTRODUCTION

The transition from premenopause to menopause marks a critical phase in a woman's life, often accompanied by a range of emotional, physiological, and behavioral changes. This period is primarily driven by fluctuations in ovarian hormones, particularly estrogen and progesterone, which influence not only reproductive functions but also mood regulation, cognitive stability, and neurophysiological rhythms (Brinton, 2009). Many women reports heightened emotional sensitivity, persistent feelings of unease, irritability, and reduced mental clarity, which may interfere with their interpersonal relationships and daily functioning (Freeman, 2010). Concurrently, disruptions in rest patterns are frequently observed, including difficulty falling asleep, frequent awakenings during the night, and a diminished sense of refreshment upon waking (Soares & Frey, 2010). These experiences are shaped by both internal biological shifts and external psychosocial stressors, such as changing family roles, occupational demands, and evolving perceptions of self during midlife. Collectively, these challenges represent significant aspects of women's health that require closer attention during this transitional stage.

Psychological distress refers to a range of emotional and psychological symptoms or experiences that can indicate an individual's mental or emotional suffering (Drapeau et al., 2012). It encompasses feelings of discomfort, anxiety, sadness, hopelessness, or unease that can significantly impact a person's well-being and functioning. Psychological distress can manifest in various ways, such as persistent worry, low mood, irritability, difficulty concentrating, changes in appetite or sleep patterns, and physical symptoms like headaches or fatigue. It's important to recognize and address psychological distress to promote mental health and overall quality of life. People can face psychological distress due to various factors, including life events such as loss of a loved one, relationship problems, financial difficulties, job loss, or major life changes can trigger psychological distress. Trauma experiencing or

witnessing traumatic events like abuse, violence, accidents, or natural disasters can lead to significant emotional distress and posttraumatic stress disorder (PTSD). Mental Health Disorders such as anxiety disorders, depression, bipolar disorder, schizophrenia, and personality disorders can cause ongoing psychological distress and impairment in daily functioning. Social and environmental factors such as social isolation, discrimination, bullying, harassment, poverty, housing instability, and environmental stressors can all contribute to psychological distress. Relationship Issues like conflict, separation, divorce, family problems, or strained relationships with friends or family members can cause emotional distress and mental health challenges. Substance abuse and addiction can lead to psychological distress, exacerbating underlying mental health issues and causing additional problems. It's important to note that psychological distress is a common human experience, and seeking support from mental health professionals, therapists, counselors, or support groups can be beneficial in managing and coping with distressing feelings and situations. Early intervention and appropriate treatment can help individuals improve their mental health and overall well-being (Kale, Manisha. K, 2013).

Psychological distress is defined as emotional condition one feels when it is necessary to cope with unsettling, frustrating or harmful situation. Psychological Distress is the unpleasant subjective state of depression and anxiety (being tense, restless, worried, irritable, and afraid) which has both emotional and physiological manifestation (Drapeau et al., 2012). America Psychological Association defines psychological distress as “A set of painful mental and physical symptoms associated with normal mood fluctuation in most people. In certain instances, however, psychological distress may signal the onset of major depressive disorder, anxiety disorders, somatoform disorders, or several other clinical conditions (Kale, Manisha, K, 2013).

Psychological distress is a generic word for unpleasant feelings or emotions that interfere with our ability to operate. It is a state of mind that interferes with daily activities and can lead to illogical perceptions of the environment, people, and oneself (Mirowsky & Ross, 2002). Psychological distress manifests itself as unhappiness, anxiety, confusion, depression, and a variety of other symptomatologies of mental diseases. Distress occurs when stress levels exceed adequate standards, resulting in psychological imbalance. Distress can cause mental processes to deteriorate and an unwillingness to act. The feeling of worthlessness can occur, leading to suicidal thoughts, fear, and anxiety can increase. Most mental problems associated with distress begin between the ages of 15 and 24 (Narula, A., 2022).

To better understand the underlying mechanisms of psychological distress, Lazarus and Folkman's Transactional Model of Stress and Coping (1984) provides a comprehensive theoretical foundation. In their work "Stress, Appraisal, and Coping", they argue that stress is not simply a stimulus or response, but a transactional process between the person and their environment. Central to this model is the concept of cognitive appraisal, which refers to how an individual evaluates a potentially stressful event. This process is divided into two main stages: primary appraisal, where the person determines whether the situation is irrelevant, benign-positive, or stressful; and secondary appraisal, where the individual evaluates their available coping resources and options. Psychological distress arises when an individual perceives a mismatch between the demands of a stressor and their ability to cope especially if the situation is appraised as threatening, harmful, or overwhelming.

Lazarus and Folkman also differentiate between problem-focused coping, which involves taking steps to change the source of stress, and emotion-focused coping, which seeks to regulate emotional responses to stress. The model underscores that individuals are not

passive recipients of stress but actively interpret and respond to it, and these responses significantly affect psychological outcomes. When coping efforts fail or are inadequate, psychological distress may manifest as anxiety, depression, irritability, or psychosomatic symptoms. This model is particularly useful in understanding why individuals exposed to similar stressors such as major life transitions, health issues, or social pressures may experience distress differently depending on their appraisal and coping strategies. In the context of health psychology and mental health research, the transactional model provides an essential framework for explaining how subjective perception, rather than objective reality alone, plays a critical role in the development of psychological distress.

The Diathesis-Stress Model offers a widely accepted and integrative framework for explaining the development of psychological distress through the interaction of predispositional vulnerabilities and environmental stressors. According to this model, individuals possess varying levels of diathesis a term referring to biological, psychological, or genetic predispositions that make them more susceptible to mental health issues. However, the presence of a diathesis alone is not sufficient to cause distress. It is the interaction between this vulnerability and the presence of external stressors such as traumatic events, chronic life pressures, or interpersonal conflicts that determines whether psychological distress will emerge (Ingram & Luxton, 2005).

In this framework, stress acts as the activating factor that triggers the expression of the underlying vulnerability. For instance, two individuals exposed to the same stressful life event may respond very differently: one may cope adaptively, while the other, who has a higher diathesis, may develop symptoms of anxiety, depression, or other forms of distress. This variability emphasizes that psychological disorders do not arise solely from external events,

but rather from the complex interplay between internal predispositions and contextual challenges (Monroe & Simons, 1991). The model is particularly valuable in understanding a wide range of mental health conditions, including depression, anxiety disorders, schizophrenia, and substance use disorders. It supports a multifactorial view of psychological distress, where both nature (genetic and neurobiological factors) and nurture (environmental and psychosocial factors) are involved. Moreover, it has important clinical implications, suggesting that effective interventions can either reduce environmental stressors or strengthen coping mechanisms to prevent the activation of underlying vulnerabilities.

Sleep is a fundamental and recurring biological state essential for survival and overall well-being (Carskadon & Dement, 2011). It is characterized by a temporary loss of consciousness, decreased sensory perception, and reduced voluntary muscle activity. Unlike pathological states such as coma, sleep is rapidly reversible and follows a cyclic pattern throughout the night, alternating between two major phases: Non-Rapid Eye Movement (NREM) and Rapid Eye Movement (REM) sleep.

Physiologically, sleep is a state of anabolic activity, during which the body undergoes tissue repair, energy restoration, immune regulation, and neurological maintenance (Walker, 2009). It plays a vital role in brain function, affecting areas responsible for memory consolidation, emotional regulation, learning, and decision-making. The central nervous system, particularly regions such as the hypothalamus, brainstem, and thalamus, plays a key role in initiating and regulating sleep cycles.

Sleep consists of several stages. NREM sleep includes three to four stages, ranging from light to deep sleep, with physiological signs such as slowed breathing, reduced heart rate, and minimal brain activity. These stages are essential for physical restoration. REM sleep, often

referred to as "dream sleep," is characterized by heightened brain activity, rapid eye movements, and temporary muscle paralysis. This stage is associated with vivid dreams and is believed to support cognitive functions like problem-solving and memory integration (Diekelmann & Born, 2010).

The need for sleep and the pattern of sleep changes across the lifespan. While newborns may sleep up to 17 hours a day, adults typically require around 7 to 9 hours of sleep per night. Adolescents experience changes in their sleep-wake cycles due to biological and social factors, often leading to sleep disturbances (Crowley et al., 2018). In older adults, sleep duration and depth tend to decline, with increased awakenings and lighter sleep stages.

Sleep deprivation, whether acute or chronic, has significant consequences for physical, cognitive, and emotional functioning. Prolonged lack of sleep can impair attention, reaction time, mood regulation, and immune defense. In extreme cases, it may contribute to severe mental health conditions, including hallucinations and psychosis. Furthermore, sleep disruptions are associated with increased risk for chronic conditions such as obesity, hypertension, cardiovascular disease, and diabetes (Cappuccio et al., 2010).

Sleep is a complex neurobiological state controlled by an intricate network of neurotransmitters and neuromodulators that influence the sleep-wake cycle. Among these, adenosine plays a prominent role in building sleep pressure throughout the day. As adenosine accumulates during wakefulness, it binds to receptors in the brain that promote drowsiness and inhibit arousal systems. Caffeine, a common stimulant, exerts its wake-promoting effects by blocking adenosine receptors, thereby delaying sleep onset. Another critical sleep-regulating hormone is melatonin, secreted by the pineal gland in response to darkness. Melatonin helps synchronize the body’s circadian rhythms and signals the onset of sleep. Gamma-aminobutyric

acid (GABA), the brain's primary inhibitory neurotransmitter, is essential for the initiation and maintenance of sleep by reducing neural activity, especially in the ventrolateral preoptic nucleus (VLPO) of the hypothalamus. Additionally, acetylcholine, norepinephrine, dopamine, and serotonin contribute to the transitions between non-rapid eye movement (NREM) and rapid eye movement (REM) sleep stages. These neurochemical systems interact in a coordinated fashion to regulate not only sleep duration but also the structure and quality of sleep, illustrating the highly regulated and dynamic nature of this fundamental biological process (Basheer et al., 2004; Arendt, 1995; Sherin et al., 1996).

The timing and regulation of sleep are heavily influenced by the body's internal clock, known as the circadian rhythm, which follows a 24-hour cycle and is controlled by the suprachiasmatic nucleus (SCN) located in the hypothalamus. This master clock coordinates the release of various hormones, body temperature, and alertness levels in response to environmental cues such as light and darkness. Melatonin production increases in the evening under dim light conditions and peaks at night, signalling the body to prepare for sleep. Disruptions to the circadian rhythm such as those caused by shift work, jet lag, or prolonged exposure to artificial light can result in sleep disorders, impaired cognition, metabolic dysfunction, and mood disturbances (Moore & Eichler, 1972; Knutsson, 2003). Importantly, the circadian system not only determines sleep timing but also influences the distribution of sleep stages across the night, with deep sleep more prominent in the early part and REM sleep increasing toward the morning. Therefore, maintaining a regular sleep-wake schedule that aligns with the circadian rhythm is essential for ensuring optimal sleep quality, physical health, and cognitive performance.

Sleep patterns are not determined solely by biology; they are also shaped by cultural practices, societal norms, and socioeconomic factors. Different cultures have diverse attitudes toward sleep some embrace biphasic sleep patterns, including midday naps or "siestas," while others strictly adhere to monophasic sleep schedules, typically at night. Cultural expectations surrounding productivity, work ethics, parenting roles, and gender can dictate when, where, and how long individuals sleep (Worthman & Melby, 2002). In modern industrialized societies, the widespread use of technology and artificial lighting has extended wakefulness and contributed to reduced sleep duration, particularly among young people. Moreover, lower socioeconomic status has been consistently linked to shorter sleep duration and poorer sleep quality due to factors such as irregular work shifts, overcrowded living conditions, limited access to healthcare, and elevated stress levels (Patel et al., 2010). These disparities highlight that sleep is not just a physiological function but also a reflection of the social and cultural environment in which a person lives. Addressing these social determinants is essential to promoting equitable sleep health across populations.

Significant gender differences have been observed in sleep patterns, disorders, and experiences, influenced by both biological and psychosocial factors. Research shows that women tend to report more frequent sleep disturbances, particularly insomnia, yet they often exhibit better objective sleep quality and sleep efficiency compared to men (Mallampalli & Carter, 2014). Hormonal fluctuations throughout the menstrual cycle, pregnancy, and menopause are key contributors to sleep disruption in women. For instance, decreased levels of estrogen and progesterone during menopause have been associated with night sweats, hot flashes, and fragmented sleep (Baker & Driver, 2007). During pregnancy, physical discomfort and hormonal changes can affect sleep onset and maintenance. Conversely, men are more likely to experience obstructive sleep apnea (OSA), a condition characterized by repetitive episodes

of breathing cessation during sleep, especially in those who are overweight or middle-aged (Young et al., 2002). In addition to physiological differences, societal roles and caregiving responsibilities often contribute to increased sleep fragmentation in women. These differences emphasize the importance of gender-specific approaches in both sleep research and the development of interventions aimed at improving sleep health.

The relationship between sleep and mental health is deeply intertwined, with each influencing the other in a bidirectional manner. Sleep disturbances are not only symptoms of many mental health conditions such as depression, anxiety, and post-traumatic stress disorder but are also considered risk factors for the development and exacerbation of these conditions. For example, individuals experiencing chronic insomnia are at a significantly higher risk of developing depression, with studies showing nearly double the incidence compared to good sleepers (Baglioni et al., 2011). Poor sleep affects emotional regulation, attention, and cognitive flexibility, thereby impairing daily functioning and resilience. Moreover, REM sleep plays a critical role in processing emotional memories; disruptions in this phase may increase vulnerability to mood disorders. Encouragingly, therapeutic interventions like Cognitive Behavioural Therapy for Insomnia (CBT-I) have shown not only to improve sleep quality but also to alleviate co-occurring psychiatric symptoms, suggesting that addressing sleep can be a foundational step in mental health treatment (Taylor & Pruiksma, 2014). This growing body of evidence supports the integration of sleep assessment and management into routine mental health care.

Sleep is not merely a passive state of rest; it is a highly active biological process that supports numerous physiological systems. During sleep, the body undergoes vital restorative functions, including tissue repair, immune regulation, and the clearance of neurotoxins from

the brain. Chronic sleep deprivation has been associated with a wide range of health problems, including hypertension, type 2 diabetes, obesity, cardiovascular disease, and weakened immune function (Cappuccio et al., 2010). Lack of adequate sleep alters glucose metabolism and appetite hormones such as leptin and ghrelin, promoting increased hunger and calorie intake, thereby contributing to weight gain (Spiegel et al., 2004). Additionally, poor sleep reduces the effectiveness of the immune system, leading to increased susceptibility to infections and slower recovery times (Besedovsky et al., 2012). Sleep is also crucial for maintaining hormonal balance, regulating stress through cortisol modulation, and supporting cognitive performance and memory consolidation. Thus, promoting healthy sleep practices is not only essential for individual well-being but also a critical public health priority.

Sleep needs and architecture evolve significantly throughout the human lifespan, reflecting changing physiological and developmental demands. Newborns require the most sleep, typically between 14 and 17 hours per day, with a substantial portion spent in REM sleep to support brain development (Hirshkowitz et al., 2015). As children grow, total sleep time decreases, and sleep becomes more consolidated at night. Adolescents experience a natural delay in their sleep-wake cycle due to shifts in melatonin secretion, often clashing with early school start times and leading to sleep deprivation (Carskadon et al., 2004). Adults generally need 7 to 9 hours of sleep, but lifestyle factors such as work, parenting, and screen time often interfere. Older adults typically sleep less and experience lighter sleep with more frequent awakenings, partly due to health conditions, medications, and age-related changes in circadian rhythm (Floyd et al., 2000). Deep slow-wave sleep considered the most restorative phase declines with age, which may affect memory and physical recovery. Understanding these changes is essential for tailoring sleep interventions across the lifespan and promoting lifelong sleep health.

Sleep quality is a multifaceted concept that refers to how well an individual sleeps, considering factors such as ease of falling asleep, staying asleep through the night, and waking up feeling rested and refreshed. It reflects not only the total duration of sleep but also the depth, continuity, and restorative value of that sleep. Unlike sleep quantity, which can be objectively measured in hours, sleep quality involves subjective experiences and physiological outcomes (Krystal & Edinger, 2008).

Good sleep quality is generally characterized by: The ability to fall asleep within a reasonable time after going to bed, remaining asleep without frequent awakenings, experiencing deep and restful stages of sleep, waking up naturally and feeling restored and alert. On the other hand, poor sleep quality often includes difficulty initiating sleep (prolonged sleep latency), frequent nighttime awakenings, restless or shallow sleep, and waking up feeling unrefreshed or fatigued (Buysse et al., 1989).

Physiologically, high-quality sleep is associated with proper functioning of the circadian rhythm, hormonal regulation (such as melatonin and cortisol), and adequate time spent in deeper stages of Non-Rapid Eye Movement (NREM) and Rapid Eye Movement (REM) sleep. During these stages, the body engages in tissue repair, immune system strengthening, and neural processing necessary for learning and emotional regulation (Carskadon & Dement, 2011).

Sleep quality is tightly linked to neurochemical changes in the brain. Neurotransmitters such as adenosine, gamma-aminobutyric acid (GABA), serotonin, and melatonin regulate the initiation and maintenance of sleep. Adenosine builds up during wakefulness and promotes sleep pressure, while melatonin governs circadian rhythm and signals the onset of sleep (Basheer et al., 2004; Arendt, 1995). Disruptions in these systems whether due to stress, poor

habits, or environmental factors can reduce the depth and continuity of sleep, thereby impairing its quality. For example, stress elevates cortisol levels, which can interfere with melatonin production and delay sleep onset.

Numerous biological, psychological, and lifestyle factors influence sleep quality. Stress, anxiety, depression, chronic pain, environmental disturbances (like noise or light), and irregular sleep schedules are among the most common disruptors. Modern lifestyles often compromise sleep quality. Late-night screen exposure, irregular work hours, poor dietary habits, and lack of physical activity all contribute to disturbed sleep. In addition, environmental conditions like noise, light pollution, and uncomfortable sleeping arrangements can fragment sleep and reduce its restorative value (Krystal & Edinger, 2008).

Sleep quality plays a vital role in overall health and well-being. High-quality sleep enhances cognitive performance, emotional stability, and physical energy. It supports memory consolidation, decision-making, and problem-solving (Walker, 2009; Diekelmann & Born, 2010). Conversely, poor sleep quality can lead to mood disturbances, reduced attention and concentration, weakened immune function, and increased risk of chronic illnesses such as cardiovascular disease, diabetes, and depression.

In specific populations, such as adolescents, women undergoing hormonal transitions, and individuals engaged in high performance activities like athletics, sleep quality becomes even more critical (Minges & Redeker, 2016; Owens et al., 2014). These groups may be particularly vulnerable to sleep disruptions due to physiological changes, psychological stress, or demanding schedules. To better understand the underlying mechanisms and purposes of sleep, researchers have developed several foundational theories. Each offers a unique lens for

interpreting sleep's role in human evolution, physiology, and cognitive functioning (Siegel, 2005).

Premenopause is a transitional phase in a woman's reproductive life that typically begins in the late 30s or early 40s and marks the gradual decline of ovarian function leading up to menopause (Harlow et al., 2012). Unlike other endocrine organs, the ovaries undergo an abrupt reduction in their functional units the follicles resulting in significant hormonal and reproductive changes. This period is characterized by irregular menstrual cycles, fluctuations in hormone levels, and varying degrees of subfertility. Clinically, women may experience dysfunctional uterine bleeding, vasomotor symptoms such as hot flashes, and an increased risk of miscarriages due to declining oocyte quality. The hormonal profile during premenopause often includes elevated follicle-stimulating hormone (FSH) levels and a decline in inhibin-B and anti-Müllerian hormone (AMH), with estradiol levels showing erratic patterns. These changes can impact not only fertility but also overall physical and psychological health. Despite its significance, premenopause has historically received less clinical attention compared to menopause itself. However, with increasing trends of delayed childbearing and the rising focus on women's health, it is now recognized as a critical period for early intervention, awareness, and research (Broekmans et al., 2009; Harlow et al., 2012).

Although menstrual cycles may still be present during Premenopause, the quantity and quality of ovarian follicles decline rapidly, leading to decreased fertility and hormonal instability. Studies have shown that the first signs of premenopause often include subtle but progressive changes in menstrual cycle length and flow, as well as shifts in mood, energy levels, and sleep patterns. These symptoms are driven by hormonal imbalances involving the

hypothalamic-pituitary-ovarian axis, particularly an increase in FSH levels and a decrease in ovarian hormone production such as inhibin-B, AMH, and, later, estradiol and progesterone.

The reproductive challenges faced during Premenopause are especially significant in modern contexts where many women delay childbirth into their late 30s or early 40s, a time when natural fertility begins to decline. The decline in ovarian reserve during this stage complicates conception and increases the risk of adverse pregnancy outcomes. Furthermore, vasomotor symptoms like hot flashes, night sweats, and emotional disturbances may begin to appear even before menstruation ceases, signalling a broader systemic impact beyond reproductive health (Santoro, 2005; Freeman et al., 2007).

A special period in the life of every woman is menopause, defined as: “The permanent cessation of menstruation for 12 consecutive months due to the loss of ovarian follicle function marking the end of a woman’s reproductive years (WHO, 1996). Biologically, menopause means a loss of fertility for a woman and is a natural physiological process that usually occurs between the ages of 45 and 55”. Menopause is an important event in a woman’s life and is associated with symptoms such as hot flashes, night sweats, palpitations, mood swings, insomnia, anxiety, depression, attention deficit disorder, nervousness, headaches, mood swings, dysphoria, tension and tearfulness. Hormonal changes taking place in a woman’s body significantly affect every day functioning; moreover, there are many controversies regarding the role of menopause in the development of depression and anxiety. It is worth noting that although there is an increased risk of clinical and subclinical depression during the period of reduced estrogen levels, its occurrence should not be directly attributed to menopause, but to various factors, including neurotransmitters, sociodemographic variables, psychosocial

variables, personality traits or genome (Maiello, M., Cecere, A., Ciccone, M. M., & Palmiero, P ,2023).

Phase before menopause called perimenopause here when a woman's body begins to produce less estrogen. This phase can last for several years and is marked by irregular menstrual cycles and various symptoms like hot flashes, mood swings, and changes in sleep patterns. It typically starts in a woman's 40s but can begin earlier for some individuals (Santoro & Randolph, 2011). The postmenopausal women are those who have completed the menopausal transition. Menopause is defined as the absence of menstrual periods for 12 consecutive months. Postmenopausal women no longer experience menstrual cycles or ovulation, and their estrogen levels have significantly decreased. This phase marks the end of a woman's reproductive years (Harlow et al., 2012). The main difference between perimenopause and postmenopausal women lies in their respective stages within the menopausal transition. woman has gone through menopause, which is confirmed by 12 consecutive months without a menstrual period. Common symptoms of menopause include vaginal dryness, changes in libido, potential bone density loss (osteoporosis risk), and increased risk of cardiovascular disease due to decreased estrogen levels.

A menopausal women experience many psychological problems. When any individual experience psychological problems she adopts the different ways to overcome the problems. Similarly, many psychological problems like Depressive disorders, anxiety, poor self-image, and fatigue due to insomnia reduction in self confidence faced by menopausal women and to overcome such psychological problems different coping strategies are adopted by them. Similarly, such studies are carried out by researcher on coping strategies adopted by menopausal women. Emotionally, women may experience depression, fatigue due to insomnia, hot flashes and night sweats, and a reduction in self-confidence and libido. Although these

emotional responses can be triggered by hormonal changes, they may also be related to other factors. Reaching the menopause, and the changes happening in her body, may make a woman feel old, unattractive and worthless and these feelings can trigger depression and lack of sex drive (Potdar, N., & Shinde.M, 2014).

Menopause period can bring unique challenges and experiences for women: Challenges faced during Perimenopause the Irregular Menstrual Cycles include Periods may become irregular in frequency, duration, and flow. Hormonal Fluctuations of Fluctuating estrogen and progesterone levels can lead to mood swings, irritability, and anxiety. Hot Flashes and Night Sweats are sudden feelings of heat, sweating, and flushing is common. Also faced Sleep Disturbances Changes in hormone levels can disrupt sleep patterns, leading to insomnia or waking up frequently during the night. Vaginal Changes like Dryness discomfort during intercourse, and increased susceptibility to infections can occur due to decreased estrogen levels. Changes in Libido in some women may experience a decrease in sexual desire or changes in sexual response. Bone Health Concerns of estrogen helps maintain bone density, so decreased estrogen levels during perimenopause can lead to bone density loss and increased risk of osteoporosis. Challenges faced during menopause in Vaginal Dryness and Atrophy can Reduced estrogen levels can lead to vaginal dryness, thinning of vaginal tissues, and discomfort during intercourse. Urinary Incontinence is weakening of pelvic muscles and tissues can contribute to urinary incontinence issues. Bone Health of the menopausal women is at increased risk of osteoporosis due to decreased estrogen levels, which can lead to fragile bones and fractures. Cardiovascular Health is estrogen plays a protective role in heart health, so menopausal women have an increased risk of heart disease. Some women may experience mood changes, anxiety, or depression during post menopause, which can be influenced by hormonal changes and other factors. It's important for women in menopause to maintain regular

check-ups with healthcare providers, adopt a healthy lifestyle (including regular exercise, balanced diet, and stress management), and discuss any concerning symptoms or health issues with their doctors to receive appropriate guidance and support. (Hopkins, J, 2016).

Need and Significance

The transition from premenopause to menopause marks a critical phase in a woman's life, typically occurring between the late 30s and early 50s. This period is characterized by significant hormonal changes particularly the decline in estrogen and progesterone levels which can lead to a variety of physical, psychological, and emotional challenges. Among the most reported concerns during this transition are increased levels of psychological distress, such as anxiety, mood swings, and depressive symptoms, along with disturbances in sleep quality, including insomnia and non-restorative sleep.

Both psychological distress and sleep quality index are essential components of overall well-being. Disruptions in these areas can affect not only a woman's mental health but also her daily functioning, interpersonal relationships, and quality of life. Although these issues are prevalent, there remains a gap in research specifically focusing on the comparative experience of menopausal and premenopausal women in relation to these variables.

Understanding the patterns and differences in psychological distress and sleep quality index across the menopausal transition is essential for expanding the existing knowledge on women's midlife health. This study is needed to highlight the unique challenges faced by women during this phase and to provide empirical data that can be used to inform future research, public health awareness, and gender-sensitive health policies.

Statement of the problem

The present study is entitled “Psychological Distress and Sleep Quality Index among Menopausal and Premenopausal Women.” The transition from premenopause to menopause represents a critical phase in a woman’s life, characterized by significant hormonal, emotional, and physiological changes. During this period, many women experience psychological distress, including symptoms such as anxiety, depression, irritability, and emotional instability. Sleep disturbances are also commonly reported, which may further aggravate psychological symptoms and impair overall well-being. Although both psychological distress and sleep quality are essential indicators of health, their interrelationship across the menopausal transition remains an area requiring further exploration. This study aims to examine and compare the levels of psychological distress and sleep quality index between menopausal and premenopausal women, thereby contributing to a deeper understanding of the mental health and sleep challenges associated with this transitional life stage.

Objectives of the study

- To find out the difference in psychological distress between menopausal and premenopausal women.
- To find out the difference in sleep quality index between menopausal and premenopausal women.
- To find out the relationship between psychological distress and sleep quality index among menopausal women.
- To find out the relationship between psychological distress and sleep quality index among premenopausal women.

Hypotheses of the study

- Ho1: There is no significant difference in psychological distress between menopausal and premenopausal women
- Ho2: There is no significant difference in sleep quality index between menopausal and premenopausal women
- Ho3: There is no significant relationship between psychological distress and sleep quality index among menopausal women
- Ho4: There is no significant relationship between psychological distress and sleep quality index among premenopausal women

CHAPTER II

REVIEW OF LITERATURE

Theoretical Review

Beck's Cognitive Theory: - emphasizes the role of cognitive distortions and maladaptive thinking patterns in the development and maintenance of psychological distress. Originally formulated by Aaron T. Beck (1967) in the context of depression, the theory proposes that individuals develop automatic negative thoughts in response to life events, which stem from underlying dysfunctional beliefs or schemas shaped by early life experiences. These cognitive distortions such as catastrophizing, overgeneralization led individuals to perceive situations more negatively than they are.

A central component of Beck's theory is the cognitive triad, which consists of negative views about the self ("I am worthless"), the world ("Everyone is against me"), and the future ("Things will never get better"). These thoughts become habitual and contribute to emotional dysregulation and behavioural withdrawal (Beck, 1976). The theory holds that distress arises not necessarily from the events themselves, but from the individual's interpretation of those events.

Cognitive theory has been particularly impactful in the development of Cognitive Behavioural Therapy (CBT), which helps clients identify, challenge, and reframe maladaptive thoughts to foster healthier emotional and behavioural responses. Numerous studies support the effectiveness of CBT in treating conditions such as depression, anxiety disorders, and stress-related conditions (Clark & Beck, 2010). The theory has been expanded and empirically validated across various populations and psychological conditions, solidifying its foundational role in understanding and managing psychological distress.

Transactional Model of Stress and Coping (Lazarus & Folkman): - developed by Lazarus and Folkman (1984), is a dynamic framework that explains how individuals experience and respond to stress. Unlike models that focus solely on the stressor or the outcome, this theory emphasizes the ongoing interaction (transaction) between the individual and their environment. It states that psychological distress arises not simply from a stressful event, but from the person's appraisal of the situation and their perceived ability to cope.

The model involves two core cognitive processes: primary appraisal, where the individual evaluates whether a situation is threatening, challenging, ; and secondary appraisal, where they assess their resources to manage the stressor. If an individual perceives the situation as threatening and beyond their coping capacity, psychological distress is likely to ensue.

Two major types of coping strategies are identified in this model: problem-focused coping, which involves efforts to change or eliminate the stressor, and emotion-focused coping, which aims to regulate the emotional response to the stressor (e.g., seeking support, practicing mindfulness). The model also includes reappraisal, a process of reevaluating the situation based on new information or coping outcomes.

This theory is widely used in health psychology and clinical practice, particularly in managing chronic illness, caregiving, grief, and menopausal distress. It underlines the importance of coping resources, such as social support, self-efficacy, and resilience, in mediating the impact of stress. The model informs intervention strategies that promote adaptive coping, emotional regulation, and empowerment, thus helping individuals maintain psychological well-being under stress (Lazarus & Folkman, 1987).

Energy Conservation Theory of Sleep: - originally proposed by William Webb (1974), views sleep as an adaptive evolutionary mechanism developed to reduce metabolic demand and conserve energy. According to this theory, sleep enables organisms to lower their body temperature, heart rate, and energy expenditure during periods when wakeful activity would be inefficient or unsafe, such as nighttime. Empirical data show that metabolic rate decreases significantly during non-REM sleep, resulting in energy savings of approximately 10–15%. Additionally, comparative studies across species reveal that sleep patterns are closely linked to ecological demands animals with higher caloric needs or greater predation risks have evolved specific sleep strategies. The theory reframes sleep not as a passive state, but as a strategic energy management process that promotes survival. While it does not address memory consolidation or emotional regulation, the Energy Conservation Theory offers a clear physiological and evolutionary rationale for the necessity of sleep across all species.

The Information Consolidation Theory: - grounded in the field of cognitive neuroscience, proposes that sleep plays an essential role in the organization, processing, and long-term storage of information acquired during wakefulness. Prominent researchers such as Robert Stickgold and Jan Born have shown that different stages of sleep contribute to distinct forms of memory: slow-wave sleep (SWS) is primarily involved in consolidating declarative memories, while REM sleep facilitates emotional processing, procedural learning, and creative problem-solving. This theory is supported by a wide array of experimental studies demonstrating that individuals who sleep after learning tasks show significantly better recall and performance than those who are sleep deprived. The hippocampus and neocortex engage in a “memory replay” mechanism during sleep, allowing short-term memories to be integrated into long-term storage. The Information Consolidation Theory thus explains why sleep is

indispensable for cognitive development, academic performance, and emotional stability, making it highly relevant in educational, therapeutic, and clinical settings.

Repair and Restoration Theory of Sleep: - proposes that sleep serves a fundamental biological function by allowing both the body and brain to recover from the physical and psychological strain experienced during wakefulness. This theory was developed by researchers such as Ian Oswald (1980) and William Webb (1979), who emphasized that sleep particularly non-REM sleep is crucial for tissue growth, muscle repair, protein synthesis, and the release of growth hormones. Neurologically, the brain utilizes sleep to restore neurotransmitter levels and clear neurotoxic waste. Recent scientific evidence, including the discovery of the glymphatic system (Xie et al., 2013), supports this theory by showing that the brain uses sleep to remove harmful metabolic byproducts like beta-amyloid. Sleep deprivation studies further indicate impairments in immune functioning, cognitive performance, and emotional stability, reinforcing the idea that adequate sleep is essential for overall health. Thus, the Repair and Restoration Theory highlights sleep as a biologically necessary process for maintaining both physical and mental homeostasis.

Empirical Review

Ming Jun Kuck and Eef Hoger Vorst (2024) conducted a study titled “Stress, Depression and Anxiety: Psychological Complaints Across Menopausal Stages” to examine the relationship between psychological complaints (depression, anxiety, poor memory) and menopausal stages, as well as the role of resilience, self-efficacy, and perceived stress levels. The study included 287 women who completed the Menopausal Quality of Life (MenQoL),

Perceived Stress Scale (PSS-10), Brief Resilience Scale (BRS), and General Self-Efficacy (GSE) scales. The results showed that early perimenopausal women reported the highest levels of stress, depression, and anxiety, with the lowest psychosocial quality of life. However, postmenopausal women reported similar psychological experiences to premenopausal women. When age was controlled, menopausal stage no longer predicted stress and anxiety, but depression was not fully explained by age. Resilience and self-efficacy were strongly associated with lower levels of depression, anxiety, and stress, regardless of menopausal stage or age. Stress was the only factor associated with poor self-reported memory, independent of age or menopausal status. The study concluded that therapies aimed at enhancing resilience and self-efficacy could help mitigate psychological complaints in women at any stage of menopause (Kuck & Hogervorst, 2024).

Lee, S., et al (2024) conducted a study titled “Association between Menopausal Women’s Quality of Life and Aging Anxiety: The Role of Life Satisfaction and Depression” to explore the relationships among menopausal quality of life, life satisfaction, depression, and aging anxiety in middle-aged women. The study surveyed 993 women aged 45–65 residing in Seoul, Korea, using an online questionnaire that assessed these variables. The researchers employed a Process Macro Model 4 to analyze the data. The results revealed that aging anxiety was associated with a lower menopausal quality of life ($r = 0.37$, $p < 0.001$), lower life satisfaction ($r = -0.46$, $p < 0.001$), and higher depression ($r = 0.42$, $p < 0.001$). Additionally, depression (95% CI = 0.025, 0.058) and life satisfaction (95% CI = 0.038, 0.064) were found to mediate the relationship between menopausal quality of life and aging anxiety. The study concluded that low menopausal quality of life directly affects aging anxiety, while decreasing depression and increasing life satisfaction could mitigate this anxiety. These findings highlight

the importance of developing programs to improve quality of life, enhance life satisfaction, and reduce depression in menopausal women to address aging anxiety (Lee et al., 2024.

Sophie Temple, Eef Hogervorst, and Gemma L. Witcomb (2024) conducted a study titled “Differences in menopausal quality of life, body appreciation, and body dissatisfaction between women at high and low risk of an eating disorder” to explore differences in menopausal quality of life, body appreciation, and body dissatisfaction between women at high or low risk of an eating disorder. The study included 255 women aged 40-60 years, who were classified based on their Eating Attitudes Test-26 (EAT-26) scores. The results revealed that women at high risk of an eating disorder reported poorer menopausal quality of life, with higher scores on the sexual, physical, and psychosocial subscales of the Menopause-Specific Quality of Life Questionnaire (MENQOL). These women also experienced more body dissatisfaction and had less body appreciation compared to those at low risk. The study highlighted that menopausal quality of life was a significant predictor of body appreciation. The findings suggest that interventions targeting both body dissatisfaction and body appreciation, while also supporting the sexual, physical, and psychosocial aspects of menopause, could be beneficial for women at higher risk of eating disorders (Temple et al., 2024).

Vaishvi Patel, Sue Ross, and Beate C. Sydora (2023) conducted a study titled “Assessing young adult’s menopause knowledge to increase understanding of symptoms and help improve quality of life for women going through menopause; a student survey” to assess young adults' knowledge of menopause and its symptoms to improve support for women experiencing menopause. The study used an electronic questionnaire, which was pilot-tested and then distributed to university students. The final survey collected responses from 828 students, with an average age of 22.1 years, and 83.6% of participants were female. The results showed that while most students had a basic understanding of menopause physiology, there

were significant gaps in knowledge regarding symptoms and symptom management. Both male and female students demonstrated increased confidence in their knowledge by the end of the survey, with female participants and those with personal connections to menopausal women showing a higher level of understanding. The study concluded that young adults, regardless of gender, possess a general baseline knowledge of menopause and its symptoms but could benefit from targeted educational resources. Such resources could help increase awareness, reduce stigma, and improve social support for women going through menopause (Patel et al., 2023).

Wang, Q., et al. (2022) conducted a study titled "The Effect of Resilience and Family Support Match on Psychological Distress among Women in the Menopausal Transition Based on Polynomial Regression and Response Surface Analysis" to find out how resilience and family support interact to influence psychological distress in women during the menopausal transition (MT). The study included 858 women from Shandong Province, China, who completed surveys on resilience, family support, and psychological distress. Using polynomial regression and response surface analysis, the study found that when resilience and family support agreed, their combined effect created an inverted U-shape curve, indicating less psychological distress with increased resilience and family support. When there was a mismatch between resilience and family support, the effect was still negative, but less pronounced. The study concluded that both resilience and family support play crucial roles in protecting women from psychological distress during MT, and interventions should consider their combined effects (Wang et al., 2022).

Bashaer Aloufi and Noha S. Hassanien (2022) conducted a study titled "The Association of Menopausal Symptoms and Social Support Among Saudi Women at Primary Health Care Centers in Taif, Saudi Arabia" to explore how menopausal symptoms are linked to social support and lifestyle factors among Saudi women. The study involved 361 women

and used the Menopause Rating Scale (MRS) to measure symptom severity and the Multidimensional Scale of Perceived Social Support (MSPSS) to assess social support. The results showed that common menopausal symptoms included physical exhaustion, joint discomfort, and irritability. The study found that social support, lifestyle factors like quitting smoking, weight loss, and exercise were significant in reducing menopausal symptoms. These findings can guide policymakers in developing targeted health interventions for women in this age group (Aloufi & Hassanien, 2022).

Kupcewicz, E., et al. (2021) conducted a study titled “Relationship Between Frequency and Intensity of Menopausal Symptoms and Quality of Life Among Polish Nurses” to examine the relationship between the frequency and intensity of menopausal symptoms and the quality of life among Polish nurses aged 45–55 during the perimenopausal period. The study included 334 nurses, with 176 nurses in the perimenopausal age group and 158 nurses aged 25–35 as a comparison group. Data were collected using the WHOQoL-Bref Questionnaire and the Menopause Symptom List.The results revealed that nurses aged 25–35 reported significantly higher satisfaction with overall health ($M = 3.9$; $SD = \pm 0.7$) compared to nurses aged 45–55 ($M = 3.7$; $SD = \pm 0.7$; $p < 0.02$). In the perimenopausal group, significant variations were observed in the frequency ($F = 62.64$; $p < 0.0001$) and intensity ($F = 130.18$; $p < 0.0001$) of menopausal symptoms. Psychological symptoms were found to be more frequent and intense than vasomotor and somatic symptoms ($p < 0.0001$). Negative correlations were identified between the frequency and intensity of menopausal symptoms and quality of life across somatic, mental, social, and environmental domains, with correlation values ranging from $r = -0.19$ to $r = -0.48$. The study concluded that menopausal symptoms significantly negatively impact the quality of life of nurses during the perimenopausal period (Kupcewicz et al.,2021).

Arnot, M., et al. (2021) conducted a study titled “The relationship between social support, stressful events, and menopause symptoms” to examine the relationship between social support, stressful events, and vasomotor symptoms (VMS) during menopause using nine years of data from the Study of Women’s Health Across the Nation (n = 2,718). The study used multilevel Poisson regression with random effects to explore whether social support decreases VMS frequency, stress worsens VMS, and support buffers the effects of stress. The findings showed that stress significantly increased the frequency of VMS. Women currently upset by a stressful event reported 21% more VMS than those who experienced no life stressor. However, contrary to expectations, emotional support did not strongly reduce VMS frequency or buffer against stress. Factors such as age, marital status, smoking, overall health, ethnicity, and menopausal status were also considered in the analysis. The study concluded that stress, particularly its emotional impact, has a stronger influence on menopausal symptoms than social support, underscoring the need to address stress management during the menopausal transition (Arnot et al., 2021).

Hwang et al. (2021) conducted a study titled “Sleep Quality and Associated Factors in Premenopausal, Perimenopausal, and Postmenopausal Women in Korea” to explore sleep quality and its related factors among Korean women in different stages of menopause, using data from the 2016 Korean Study of Women’s Health Related Issues (K-Stori). This was a large-scale, cross-sectional survey that included 3,000 women aged between 45 and 64 years. The study aimed to compare sleep quality among premenopausal, perimenopausal, and postmenopausal women using the Pittsburgh Sleep Quality Index (PSQI). The results showed that 26% of the participants had poor sleep quality. The prevalence of poor sleep increased with advancing menopausal status 18.8% in premenopausal women, 26.3% in perimenopausal women, and 29.5% in postmenopausal women. Women in the peri- and postmenopausal stages

were found to be 1.50 and 1.73 times more likely, respectively, to report poor sleep compared to premenopausal women. In addition to menopausal status, other factors such as chronic illness, depression, high-risk alcohol consumption, being single, and the use of dietary supplements were significantly associated with poor sleep. The study concluded that poor sleep is common in midlife Korean women, especially during and after menopause, and highlighted the importance of managing sleep issues during this transition to promote better overall health.

Baker et al. (2018) conducted a study titled “Sleep Problems During the Menopausal Transition: Prevalence, Impact, and Management Challenges” to examine the nature, causes, and clinical approaches to sleep disturbances experienced by women during the menopausal transition. Drawing on both self-report data and polysomnographic findings, the study emphasized that 26% of women reported severe sleep problems, often qualifying for a diagnosis of insomnia due to significant daytime impairment. The authors found that sleep disturbances were strongly linked to menopausal stage and hormonal changes particularly fluctuations in follicle-stimulating hormone and estradiol independent of age. Hot flashes (HFs) were identified as a major factor contributing to sleep disruptions, with HF-related awakenings significantly increasing wakefulness after sleep onset. The study also noted the comorbidity of sleep issues with depression, sleep-disordered breathing, and movement disorders, which tend to become more prevalent post-menopause. Management strategies discussed included cognitive behavioural therapy for insomnia (CBT-I), hormonal therapy, and non-hormonal pharmacological options. The authors concluded that if left untreated, chronic sleep problems during this phase could have long-term consequences on both mental and physical health, highlighting the importance of timely assessment and intervention to support overall well-being in midlife women (Baker et al., 2018).

Jalambadani, Z., et al. (2018) conducted a study titled "Investigating the Relationship between Menopause Specific Quality of Life and Perceived Social Support among Postmenopausal women in Iran" to examine the relationship between Menopause-Specific Quality of Life (MENQOL) and Perceived Social Support (PSS) among postmenopausal women in NeyshaD., Iran. The cross-sectional study involved 410 postmenopausal women, with QOL measured using the MENQOL questionnaire and PSS assessed using a modified Sarason's Social Support Questionnaire.The results showed that the average age of participants was 53.92 ± 3.86 years, and the mean QOL score was 37.83 (SD = 12.9). Subscale scores included Sexual (12.55 ± 6.96), Psychological (14.66 ± 2.20), Physical (18.11 ± 1.85), and Vasomotor (12.02 ± 4.93) domains. Perceived social support was strongly and positively correlated with overall QOL ($r = 0.68$, $P \leq 0.001$) and with all QOL subscales: Vasomotor ($r = 0.55$, $P \leq 0.001$), Psychological ($r = 0.65$, $P \leq 0.001$), Physical ($r = 0.59$, $P \leq 0.001$), and Sexual ($r = 0.48$, $P \leq 0.001$).The study concluded that higher perceived social support significantly improves the quality of life in postmenopausal women. Further research was recommended to explore other factors affecting QOL in this population.

Research Gap

Limited research has been conducted to understand the relationship between psychological distress and sleep quality among menopausal and premenopausal women. While both are important aspects of women's health during midlife, studies examining them together as interrelated issues are limited. This gap limits a comprehensive understanding of how emotional well-being and sleep disturbances may influence each other during this stage of life.

Many existing studies have focused on either psychological distress or sleep problems independently, often overlooking the possibility that these two factors may be closely

connected. By examining them in isolation, research fails to capture the broader picture of how distress may impact sleep or how poor sleep may worsen psychological health. Exploring this connection is essential, as it can provide insights into more effective support strategies for women going through menopausal changes.

Limited attention has been given to transitional stages such as premenopause, even though it is a period marked by significant hormonal, emotional, and physical changes. Most studies have concentrated on postmenopausal women, thereby missing valuable information about the challenges faced earlier in the transition. A deeper understanding of the premenopausal stage is crucial for early identification and intervention, which could help improve both mental health and sleep quality outcomes for women.

CHAPTER III

METHODOLOGY

Aim

The purpose of this study is to investigate the relationship between psychological distress and sleep quality index among menopausal and premenopausal women, and to examine whether significant differences exist in psychological distress and sleep quality index between these two groups.

Variables Under Study

Psychological Distress

Sleep Quality Index

Operational Definitions of Variables

Psychological Distress: a set of painful mental and physical symptoms that are associated with normal fluctuations of mood in most people. These symptoms may include sadness, anxiety, distraction, and somatic complaints (Mirowsky & Ross, 2002).

Sleep Quality Index: a general term referring to how well a person sleeps. It includes factors such as sleep latency (how quickly one falls asleep), sleep maintenance (the ability to stay asleep), total sleep time, and the feeling of restfulness upon waking (Buysse et al., 1989)

Menopause: the period in a woman's life, typically between the ages of 45 and 55, when menstruation ceases permanently and the production of estrogen and progesterone by the ovaries declines significantly. It marks the end of the reproductive phase and is often associated with symptoms such as hot flashes, mood swings, sleep disturbances, and changes in sexual function (Soules et al., 2001)

Premenopause: the stage of a woman's reproductive life before the onset of menopause, during which she continues to have regular menstrual cycles and hormonal levels remain relatively stable (Harlow et al., 2012)

Research Design

To examine the differences and relationships in psychological distress and sleep quality index between menopausal and premenopausal women, the study employs a correlational comparative research design. Data was collected from participants using standardized questionnaires, and quantitative analysis was conducted to identify both group differences and the association between the variables.

Participants

The participants of the study will be premenopausal and menopausal women aged between 30 and 60 years, selected through purposive sampling

Inclusion criteria

Menopausal Women:

- Women aged between 46 and 60 years.
- Self-identified as menopausal (absence of menstruation for 12 consecutive months without medical intervention).

Premenopausal Women:

- Women aged between 30 and 45 years.
- Self-identified as premenopausal (currently experiencing regular or irregular menstrual cycles, with no confirmed menopause).

Exclusion Criteria

Menopausal and Premenopausal Women:

- Women who have undergone a hysterectomy (surgical removal of the uterus).
- Women diagnosed with or undergoing treatment for any psychological or psychiatric disorders.
- Women with incomplete or missing data related to psychological distress or sleep quality assessments.

Tools Use for The Data Collection

Kessler Psychological Distress Scale (K10):

The Kessler Psychological Distress Scale (K10), developed by Kessler et al. (2003), is a 10-item self-report measure designed to assess nonspecific psychological distress based on questions about emotional states experienced in the past four weeks. This tool is widely used in clinical and population-based research to identify individuals who may be experiencing high levels of psychological distress.

Each item in the scale is scored on a 5-point Likert scale ranging from "none of the time" (score = 1) to "all of the time" (score = 5), producing a total score ranging from 10 to 50. Higher scores reflect greater levels of distress. The scoring interpretation is as follows:

10–19: Likely to be well

20–24: Likely to have a mild disorder

25–29: Likely to have a moderate disorder

30–50: Likely to have a severe disorder

The scale has shown high internal consistency, with a reported Cronbach's alpha above 0.90, and has been validated across various populations. It is useful for identifying individuals in need of further psychological evaluation or support, especially in both clinical and non-clinical settings. Certain items (questions 3 and 6) are conditionally scored, depending on previous responses, allowing for a nuanced and time-efficient assessment process.

Research indicates that the K10 demonstrates strong construct validity, with significant correlations found between K10 scores and other indicators of psychological distress and mental disorders. Its reliability, and diagnostic utility make it an effective tool in mental health screening and epidemiological studies.

Pittsburgh Sleep Quality Index (PSQI):

The Pittsburgh Sleep Quality Index (PSQI), developed by Buysse et al. (1989), is a widely used self-report instrument designed to measure subjective sleep quality over the previous month. It is commonly employed in both clinical and research settings to assess sleep disturbances and sleep-related functioning.

The PSQI consists of 19 items, which are grouped into seven components:

1. Subjective sleep quality
2. Sleep latency
3. Sleep duration
4. Habitual sleep efficiency
5. Sleep disturbances

6. Use of sleeping medication
7. Daytime dysfunction

Each component is scored on a scale from 0 to 3, with higher scores indicating greater sleep difficulty. The seven component scores are summed to produce a global score ranging from 0 to 21, where a score greater than 5 is indicative of poor sleep quality.

The PSQI has demonstrated good psychometric properties, including high internal consistency (Cronbach's alpha = 0.83) and strong test-retest reliability (r = 0.85). It has been validated across diverse populations, including those with psychiatric disorders, insomnia, cancer, and other medical conditions. The tool has also been translated into multiple languages, making it suitable for use in varied cultural contexts.

Procedure of Data Collection

Data were collected through offline administration using validated self-report instruments, including the Kessler Psychological Distress Scale (K10) to assess psychological distress and the Pittsburgh Sleep Quality Index (PSQI) to measure sleep quality.

Ethical Consideration

This study strictly followed ethical guidelines to ensure the safety, dignity, and rights of all participants. Before the study began, participants were clearly informed about the purpose of the study, the process involved, and their role in it through an information sheet and consent form. Participation in the study was completely voluntary.

The research included the use of standard psychological questionnaires to assess levels of psychological distress and sleep quality among women aged 30 to 60 who were in either the menopausal or premenopausal stage. Written informed consent was obtained from all participants. They were informed that they could withdraw from participation at any time without giving any reason, and there would be no negative consequences for doing so. Personal identity details were not collected, and participants' responses were kept private and anonymous.

All data were securely stored in password-protected files accessible only to the researcher. The information collected was used solely for academic purposes, and results were presented in summary form, ensuring that no individual could be identified. During data collection, care was taken to ensure a safe and respectful environment. The study adhered to ethical principles such as respect, fairness, and care for participants, as outlined by the American Psychological Association (APA) and the Indian Council of Social Science Research (ICSSR). If any participant experienced discomfort or distress, appropriate support was provided, and their participation was reviewed in a sensitive manner.

Data Analysis

Statistical analysis plays a crucial role in quantitative research by helping to identify patterns and relationships within the data (Gravetter & Wallnau, 2016). In the present study, statistical techniques were used to analyze the relationship between psychological distress and sleep quality among menopausal and premenopausal women.

Descriptive statistics such as mean and standard deviation were used to summarize the overall scores of psychological distress and sleep quality index. These measures provided a basic understanding of the trends and distribution of the data (Field, 2018).

To determine the appropriate statistical tests, the Shapiro–Wilk test was conducted to assess the normality of the data. As the data did not meet the assumption of normal distribution, non-parametric methods were used (Shapiro & Wilk, 1965).

To examine the relationship between psychological distress and sleep quality index, Spearman's rho correlation coefficient was used separately for the menopausal and premenopausal groups. Spearman's rho is suitable for non-normally distributed data and assesses the strength and direction of association between two continuous variables (Pallant, 2020).

Additionally, the Mann–Whitney U test was employed to compare levels of psychological distress and sleep quality between menopausal and premenopausal women. This non-parametric test is appropriate for comparing two independent groups when the data violate the assumption of normality (Nachar, 2008). The use of these methods ensured that the analysis was appropriate for the data characteristics and research objectives.

CHAPTER IV

RESULT AND DISCUSSION

Results

Table 1

Shapiro-Wilk test of normality of sample

Variables		**Shapiro-Wilk test**
	Statistics	p-value
Psychological distress	.980	.044
Subjective sleep quality	.831	.000
Sleep latency	.807	.000
Sleep duration	.780	.000
Sleep efficiency	.598	.000
Sleep disturbance	.738	.000
Use of sleep medication	.072	.000
Daytime dysfunction	.429	.000
Sleep quality index	.945	.000

The Shapiro-Wilk test was used to assess the normality of the data. The table 1 showed that Psychological Distress was not normally distributed ($p = .044$). Similarly, all components of the Pittsburgh Sleep Quality Index, Subjective Sleep Quality ($p = .000$), Sleep Latency ($p = .000$), Sleep Duration ($p = .000$), Sleep Efficiency ($p = .000$), Sleep Disturbance ($p = .000$), Use of Sleep Medication ($p = .000$), Daytime Dysfunction ($p = .000$), and the overall Sleep Quality Index (SQI) ($p = .000$) were also not normally distributed. Since all variables violated the assumption of normality ($p < .05$), non-parametric tests were chosen for further statistical analysis.

Table 2

Spearman's rho Correlation of Psychological distress and Sleep quality index among Premenopausal women (n=69)

Variables	PD	SSQ	SL	SD	SE	SD	USM	DD	SQI
PD		--	--	--	--	--	.	--	--
SSQ	.260*		--	--	--	--	.	--	--
SL	.264*	.099		--	--	--	.	--	--
SD	.523**	.115	.345**		--	--	.	--	--
SE	.395**	.248*	.319**	.420**		--	.	--	--
SD	.269*	.203	-0.18	.107	.372**		.	--	--
USM	.	.	.	.	.	.	.	.	.
DD	-0.13	.019	.015	-0.92	.071	.076	.		--
SQI	.427**	.484**	.529**	.570**	.630**	.508**	.	--	

Correlation is significant at the 0.01 level(2-tailed)

Correlation is significant at the 0.05 level(2-tailed)

Note: - Psychological Distress (PD), Subjective Sleep Quality (SSQ), Sleep Latency (SL), Sleep Duration (SD), Sleep Efficiency (SE), Sleep Disturbance (SD), Use of Sleep Medication (USM), Daytime Dysfunction (DD), Sleep Quality Index (SQI)

Spearman's rho correlation analysis was conducted to examine the relationship between psychological distress and sleep quality among premenopausal women. As shown in Table 2, the results revealed a significant positive correlation between psychological distress and the overall Sleep Quality Index score ($r = 0.472$, $p < 0.01$), suggesting that higher levels of psychological distress are associated with poorer sleep quality. Psychological distress was significantly positively correlated with subjective sleep quality ($r = 0.260$, $p < 0.05$), sleep latency ($r = 0.264$, $p < 0.05$), sleep duration ($r = 0.523$, $p < 0.01$), sleep efficiency ($r = 0.395$, $p < 0.01$), and sleep disturbances ($r = 0.269$, $p < 0.05$). Sleep latency was positively associated with sleep duration ($r = 0.345$, $p < 0.01$), sleep efficiency ($r = 0.319$, $p < 0.01$), and the Sleep Quality Index total score ($r = 0.529$, $p < 0.01$). Sleep duration also showed significant positive correlations with sleep efficiency ($r = 0.420$, $p < 0.01$) and the overall sleep quality score ($r = 0.570$, $p < 0.01$). Furthermore, sleep efficiency was positively correlated with sleep disturbances ($r = 0.372$, $p < 0.01$) and the Sleep Quality Index score ($r = 0.630$, $p < 0.01$), while sleep disturbances were positively correlated with the overall sleep quality score ($r = 0.508$, $p < 0.01$). Use of sleep medication and daytime dysfunction did not show any significant correlation with psychological distress or other sleep components. Based on these findings, Hypothesis 4, which stated that there is no significant relationship between psychological distress and sleep quality index among premenopausal women, is rejected.

Table 3

Spearman's rho Correlation of Psychological distress and Sleep quality index among Menopausal women (n=64)

Variables	**PD**	**SSQ**	**SL**	**SD**	**SE**	**SD**	**USM**	**DD**	**SQI**
PD		--	--	--	--	--	--	--	--

SSQ	.241		--	--	--	--	--	--	--
SL	.236	.251*		--	--	--	--	--	--
SD	.245	.074	.176		--	--	--	--	--
SE	.339**	.328**	.455**	.263*		--	--	--	--
SD	.021	.238	.254*	.034	.368**		--	--	--
USM	.199	.075	.159	.154	.063	.103	--	--	--
DD	.149	.196	.417**	.090	.262*	.076	.261*	--	--
SQI	.347**	.587**	.608**	.400**	.638**	.547**	.189	.580**	

Correlation is significant at the 0.01 level(2-tailed)

Correlation is significant at the 0.05 level(2-tailed)

Note: - Psychological Distress (PD), Subjective Sleep Quality (SSQ), Sleep Latency (SL), Sleep Duration (SD), Sleep Efficiency (SE), Sleep Disturbance (SD), Use of Sleep Medication (USM), Daytime Dysfunction (DD), Sleep Quality Index (SQI)

Spearman's rho correlation analysis was conducted to examine the relationship between psychological distress and sleep quality among menopausal women. As shown in Table 3, the results revealed a significant positive correlation between psychological distress and the overall Sleep Quality Index score ($r = 0.347$, $p < 0.01$), suggesting that higher levels of psychological distress are associated with poorer sleep quality. Psychological distress was significantly positively correlated with sleep efficiency ($r = 0.339$, $p < 0.05$). Subjective sleep quality was positively associated with sleep latency ($r = 0.251$, $p < 0.05$), sleep efficiency ($r = 0.328$, $p < 0.01$), and the Sleep Quality Index score ($r = 0.587$, $p < 0.01$). Sleep latency showed significant positive correlations with sleep efficiency ($r = 0.255$, $p < 0.01$), sleep disturbances ($r = 0.368$,

$p < 0.01$), and the Sleep Quality Index score ($r = 0.608$, $p < 0.01$). Sleep duration was positively related to the overall sleep quality score ($r = 0.400$, $p < 0.01$). Furthermore, sleep efficiency showed positive correlations with sleep disturbances ($r = 0.263$, $p < 0.05$) and the Sleep Quality Index score ($r = 0.638$, $p < 0.01$), while sleep disturbances were also positively correlated with the overall sleep quality score ($r = 0.547$, $p < 0.01$). Daytime dysfunction showed a significant positive correlation with sleep efficiency ($r = 0.262$, $p < 0.01$) and a moderate, though not statistically significant, association with sleep latency and the Sleep Quality Index score. There is, no significant correlations were found between the use of sleep medication and any of the variables, including psychological distress. Based on these findings, Hypothesis 3, which stated that there is no significant relationship between psychological distress and sleep quality index among menopausal women, is rejected.

Table 4

Mann-Whitney U Test in Psychological distress and Sleep quality index among Menopausal and Premenopausal women

	Population					
	Premenopause		Menopause			
Variables	M	SD	M	SD	Sig	Decision
PD	20.41	6.12	27.45	5.93	.000	Reject the null hypothesis
SQI	3.80	2.019	6.67	243	.000	Reject the null hypothesis

Note: - Psychological Distress (PD), Sleep Quality Index (SQI)

The Mann-Whitney U test was conducted to test the hypothesis 1 and 2, that is there is no significant difference in psychological distress between menopausal and premenopausal women and there is no significant difference in sleep quality index between menopausal and premenopausal women. The test shows significant difference in psychological distress (PD) and sleep quality index (SQI) between menopausal and premenopausal women ($p<.05$ for both) Therefore, Hypothesis 1 and 2 is rejected.

Discussion

The purpose of this study was to investigate the relationship between psychological distress and sleep quality index among menopausal and premenopausal women, also the study aims to examine whether there are significant differences exist between in psychological distress and sleep quality index between these two groups. The Kessler Psychological Distress Scale (K10) and the Pittsburgh Sleep Quality Index (PSQI) were used to gather data from a total of 133 participants, including 64 menopausal and 69 premenopausal women aged between 30 to 60 years. Psychological Distress is a set of painful mental and physical symptoms that are associated with normal fluctuations of mood in most people. These symptoms may include sadness, anxiety, distraction, and somatic complaints (Mirowsky & Ross, 2002). Sleep Quality Index is a general term referring to how well a person sleeps. It includes factors such as sleep latency (how quickly one falls asleep), sleep maintenance (the ability to stay asleep), total sleep time, and the feeling of restfulness upon waking (Buysse et al., 1989).

For assessing the normality of data, the Shapiro-Wilk test was used, and the results showed deviations from normality for the Psychological Distress scale, as well as for all

components of the Pittsburgh Sleep Quality Index (PSQI), including Subjective Sleep Quality, Sleep Latency, Sleep Duration, Sleep Efficiency, Sleep Disturbance, Use of Sleep Medication, Daytime Dysfunction, and the overall Sleep Quality Index. Therefore, non-parametric tests were used for further analysis.

Spearman's rho correlation analysis was conducted to examine the relationship between psychological distress and sleep quality among premenopausal women. The findings showed that psychological distress had a significant positive correlation with several components of the Pittsburgh Sleep Quality Index (PSQI), including subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, and the total sleep quality index score. This indicates that higher levels of psychological distress were associated with poorer sleep quality. Use of sleep medication and daytime dysfunction did not show any significant correlation with psychological distress or other sleep components. This may be because none of the premenopausal participants reported using any medication for sleep. For daytime dysfunction, which includes items like difficulty staying awake during daily activities and lack of enthusiasm to complete tasks, only a small number of participants reported problems in these areas. This could be the reason why it did not show a strong relationship with psychological distress. Other factors like personal motivation, daily responsibilities, or coping styles may have helped them manage their daytime activities even if they were experiencing emotional distress.

Spearman's rho correlation analysis was conducted to examine the relationship between psychological distress and sleep quality among menopausal women. The results showed that psychological distress had a significant positive correlation with sleep efficiency and the overall Sleep Quality Index, indicating that higher psychological distress was associated with poorer sleep quality. Some sleep components were also significantly related to each other.

Subjective sleep quality was positively related to sleep latency, sleep efficiency, and overall sleep quality. Sleep latency showed significant associations with sleep efficiency, sleep disturbances, and the total sleep score. Sleep duration and sleep efficiency were positively linked with overall sleep quality, and sleep efficiency was also correlated with sleep disturbances and daytime dysfunction. Although daytime dysfunction showed some association with sleep components, it did not significantly correlate with psychological distress, which could be due to other influencing factors such as age-related changes, personal coping, or physical health. No significant relationship was found between use of sleep medication and any of the variables, as none of the participants reported using sleep medication.

The Mann-Whitney U test was conducted to examine differences in psychological distress and sleep quality between menopausal and premenopausal women. The results showed a statistically significant difference in both variables, with menopausal women showing higher levels of psychological distress and poorer sleep quality compared to premenopausal women. This suggests that the menopausal stage may be associated with increased vulnerability to emotional disturbances and sleep-related problems. Hormonal changes, especially fluctuations in estrogen and progesterone, are also affect mood regulation and sleep patterns. In addition, menopausal women may also face physical discomfort (such as hot flashes or night sweats), role transitions, or increased responsibilities at home and work, which can contribute to greater distress and sleep disturbances. These findings shows that women undergoing menopause tend to experience higher psychological distress and poorer sleep quality compared to those in the premenopausal stage.

CHAPTER V

SUMMARY AND CONCLUSION

The present study was conducted to explore the relationship between psychological distress and sleep quality index among menopausal and premenopausal women. It also aimed to find out whether there are significant differences in psychological distress and sleep quality between the two groups. The intention was to better understand how the menopausal transition might affect mental health and sleep related concerns in women.

Menopause is known to bring about several physical and emotional changes, and this study assumed that such changes may contribute to increased distress and disturbances in sleep. Psychological distress refers to symptoms such as anxiety, low mood, and physical discomfort (Mirowsky & Ross, 2002), while sleep quality includes factors like time taken to fall asleep, total duration of sleep, and how rested a person feels after sleep (Buysse et al., 1989).

In this study, a correlational comparative research design was used to examine psychological distress and sleep quality among premenopausal and menopausal women aged 30 to 60 years. Data were collected from 64 menopausal and 69 premenopausal women using the Kessler Psychological Distress Scale (K10) to measure psychological distress and the Pittsburgh Sleep Quality Index (PSQI) was used to assess sleep quality.

This study was conducted in response to the limited research has investigated the relationship between psychological distress and sleep quality among menopausal and premenopausal women. Although several studies have explored psychological distress and sleep disturbances individually, only a few have investigated their relationship within a single framework.

By addressing these gaps, the present study aims to provide meaningful insights into how psychological distress and sleep quality index are affected during midlife transitions in

women. These findings may contribute to a better understanding and improved support strategies in the field of women's health and mental well-being.

Major Findings of The Study

The present study explored the relationship between psychological distress and sleep quality among menopausal and premenopausal women revealed several significant findings. Results from the Mann-Whitney U test shows a statistically significant difference in psychological distress between the two groups, with menopausal women ($M = 27.45$, $SD = 5.93$) reporting higher levels of distress than premenopausal women ($M = 20.41$, $SD = 6.12$), $p < .001$. This finding suggests that women undergoing menopause are more likely to experience heightened psychological strain, possibly due to hormonal fluctuations, physical discomfort, or emotional challenges associated with this stage of life.

A similar pattern was observed in sleep quality index also. Menopausal women reported significantly poorer sleep quality ($M = 6.67$, $SD = 2.43$) when compared to premenopausal women ($M = 3.80$, $SD = 2.01$), $p < .001$. This implies that sleep disturbances are more common and more severe in the menopausal group, which may be influenced by symptoms such as night sweats, hot flashes, and anxiety.

Spearman's rho correlation analysis further revealed a significant positive relationship between psychological distress and sleep quality index in both groups. Among premenopausal women, psychological distress showed a strong positive correlation with the overall sleep quality index ($r = .472$, $p < .01$), indicating that as psychological distress increases, sleep quality declines. Psychological distress in this group also significantly correlated with various components of sleep, including subjective sleep quality, sleep latency, sleep duration, sleep

efficiency, and sleep disturbances, suggesting a widespread impact of emotional distress across different aspects of sleep. In menopausal women, psychological distress was significantly correlated with sleep efficiency ($r = .339$, $p < .01$) and the global PSQI score ($r = .347$, $p < .01$). This shows a similar connection as in premenopausal women, but comparatively weaker.

There is no significant correlation was found between psychological distress and the use of sleep medication or daytime dysfunction in either group, suggesting that while distress affects many aspects of sleep, it may not directly influence the use of medication or noticeable daytime impairments in this sample. Overall, the findings show a consistent and meaningful pattern, as psychological distress increases, sleep quality declines in both groups.

Implications of the Study

This study shows the clear link between psychological distress and poor sleep quality among both menopausal and premenopausal women. The results show that many women experience emotional strain and disturbed sleep during these life stages, but premenopausal women seem to be more affected. This suggests that early signs of stress and sleep issues may begin even before menopause fully sets in.

Understanding this connection can help health professionals take early action. Offering counselling support, stress management techniques, and sleep hygiene education to women in their late reproductive years may prevent deeper emotional or sleep-related problems later.

The findings also suggest that mental health care should be included as part of routine women’s health services. General health workers, gynaecologists, and primary care providers should be made aware of these patterns so they can refer women for help when needed.

On a broader level, there is a need for more public awareness about how menopause and its early stages can affect both mental and physical health. Community-based programs and local health clinics can play a role in reaching women who may not speak openly about these concerns.

In short, the study reminds that women's mental and emotional health during midlife should not be overlooked. Early support and proper care can make a big difference in improving quality of life during this important phase.

Limitations of The Study

This study included 64 menopausal and 69 premenopausal women, selected through purposive sampling. While this helped focus on specific groups, it may limit how well the results apply to women from other places, age groups, or different social and economic backgrounds.

Another limitation is that the information was collected using self-report questionnaires. Participants might have misunderstood some questions or given socially acceptable answers instead of being fully honest. This could affect how accurate the results are.

The study did not investigate other factors that could affect psychological distress and sleep, such as health problems, work pressure, support from family or friends, or personal ways of coping with stress. Including these in future research might give a fuller picture.

This study did not include perimenopausal women. Including them could have helped understand the changes in distress and sleep quality across all stages of menopause.

Finally, life situations like caregiving duties, financial stress, or personal losses were not considered. These could also affect sleep and mental health and should be studied in future research.

Suggestions For Future Research

To make future studies more meaningful and inclusive, researchers should try to involve a larger and more varied group of women coming from different regions, cultures, and income levels. This would help in understanding how experiences of stress and sleep problems might differ among women from different backgrounds.

Adding other factors like how women cope with stress, how much support they receive from others, their level of resilience, and how stress they feel in general could also give a clearer picture of what affects their mental health and sleep during menopause.

Using a mixed method design that combines quantitative with qualitative interviews or focus groups discussions can provide a more holistic understanding of lived experiences of psychological distress and sleep disturbances among menopausal and premenopausal women**.**

Further studies should include a three-group comparison involving perimenopausal, premenopausal and postmenopausal women. This will provide a deeper understanding of how psychological distress and sleep quality affect and evolve across the full menopausal spectrum.

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APPENDICES

Informed Consent

Description of the study: The present research aims to study the significance of psychological distress and sleep quality among menopausal and premenopausal women. A set of psychological questionnaires will be used to measure on the study variables like psychological distress and sleep quality. You are participating in this study because your age is between 30 and 60.

In order to participate in this research study, it is necessary that you give your informed consent. Signing this informed consent indicates that you understand the nature of the research and your role in the same. Please consider the following before signing:

- Participation in this psychological research involves an understanding that personal identity will not be linked to the collected data, ensuring confidentiality.
- Participants can expect to receive an explanation of the research after their involvement.
- Some aspects of the study may not be fully disclosed at the beginning, but the full details and purpose will be revealed upon completion.
- Participation is entirely voluntary, and individuals have the right to withdraw at any time without penalty

I ..... has read the above given instructions and give my consent to participate in this study.

Signature of the participant Date

Name

Socio-Demographic Data for Menopausal Women

Name:

Age:

Education: High school/ Higher secondary/UG/PG

Marital Status: Married/Unmarried/Separated/Widow

If married, age of marriage:

Occupation: Private/Government/NGO/Housewife (Specify the job):

Type of Family (Joint / Nuclear / Extended):

Place of Residence (Urban / Semi-Urban / Rural):

Age of Menarche (Starting of menstrual cycle):

Age of Menopause (age were menstrual cycle stopped):

How many years have passed after your regular menopause:

Were you getting your periods irregularly presently:

During your menopause period, did you see any doctors (if yes then explain):

Have you undergone hysterectomy (uterus removal surgery): Yes/No

If yes, how many years ago:

Are you on any medication:

Any other disorder/disease or any medical complications:

Socio-Demographic Data for Premenopausal Women

Name:

Age:

Education: High school/ Higher secondary/UG/PG

Marital Status: Married/Unmarried/Separated/Widow

If married, age of marriage:

Occupation: Private/Government/NGO/Housewife (Specify the job):

Type of Family (Joint / Nuclear / Extended):

Place of Residence (Urban / Semi-Urban / Rural):

Age of Menarche (Starting of menstrual cycle):

Is your menstrual cycle regular?

Are you on any medication?

Any other disorder/disease or any medical complications?

Kessler Psychological Distress Scale (K10)

1- None of the time

2- A little of the time

3- Some of the time

4- Most of the time

5- All the time

Direction: Please read each question carefully and indicate how you have been feeling over the past 4 weeks. Please tick the answer that is correct for you:

1. In the past 4 weeks, about how often did you feel tired out for no good reason?
2. In the past 4 weeks, about how often did you feel nervous?
3. In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?
4. In the past 4 weeks, about how often did you feel hopeless?
5. In the past 4 weeks, about how often did you feel restless or fidgety?
6. In the past 4 weeks, about how often did you feel so restless you could not sit still?
7. In the past 4 weeks, about how often did you feel depressed?
8. In the past 4 weeks, about how often did you feel depressed?
9. In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?
10. In the past 4 weeks, about how often did you feel worthless?

PITTSBURGH SLEEP QUALITY INDEX (PSQI)

Instructions: The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month. **Please answer all questions.**

1. During the past month, what time have you usually gone to bed at night?

   _____

2. During the past month, how long (in minutes) has it usually taken you to fall asleep each night? _____
3. During the past month, what time have you usually gotten up in the morning? _____
4. During the past month, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed) _____

5. During the past month, how often have you had trouble sleeping because you...	Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
a. Cannot get to sleep within 30 minutes				
b. Wake up in the middle of the night or early morning				
c. Have to get up to use the bathroom				
d. Cannot breathe comfortably				
e. Cough or snore loudly				
f. Feel too cold				
g. Feel too hot				

h. Have bad dreams				
i. Have pain				
j. Other reason(s), please describe:				
6. During the past month, how often have you taken medicine to help you sleep (prescribed or "over the counter")?				
7. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?				
	No problem at all	Only a very slight problem	Somewhat of a problem	A very big problem
8. During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things done?				
	Very good	Fairly good	Fairly bad	Very bad
9. During the past month, how would you rate your sleep quality overall?				
	No bed partner or room mate	Partner/roommate in other room	Partner in same room but not same bed	Partner in same bed
10. Do you have a bed partner or roommate?				
	Not during the past month	Less than once a week	Once or twice a week	Three or more times a week

If you have a roommate or bed partner, ask him/her how often in the past month you have had:				
a. Loud snoring				
b. Long pauses between breaths while asleep				
c. Legs twitching or jerking while you sleep				
d. Episodes of disorientation or confusion during sleep				
e. Other restlessness while you sleep, please describe:				