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THE EFFECT OF DURATION OF MENOPAUSE ON POSTURE AND FUNCTIONAL ACTIVITY IN HOUSEWIVES DURING COVID-19

MASTER THESIS

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APPROVAL

This thesis has been deemed by the jury in accordance with the relevant articles of Yeditepe University Graduate Education and Examinations Regulation and has been approved by Administrative Board of Institute with decision dated ..... and numbered .....

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DECLARATION

I hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which has been accepted for the award of any other degree except where due acknowledgment has been made in the text.

21.02.2022

Beyzanur Beğenen

DEDICATION

To my family…

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LIST OF SYMBOLS AND ABBREVIATIONS

ASHT	American Association of Hand Therapists
BMI	Body Mass Index
FSH	Follicle Stimulating Hormone
LH	Luteinizing Hormone
N	Number
NYPR	New York Posture Rating
SD	Standard deviation
SPSS	Statistical Package for Social Science
STRAW	Stages of Reproductive Aging Workshop
TUG	Timed Up and Go
VVA	Vulvovaginal Atrophy
5XSST	5 Times Sit to Stand

ABSTRACT

Beğenen, B. (2022). The effect of duration of menopause on posture and functional activity in housewives during Covid-19. Yeditepe University, Institute Of Health Sciences, Department Of Physiotherapy And Rehabilitation, Master Thesis. Istanbul.

In the literature, there is no study related to the effect of duration of menopause on posture and functional activity in housewives. The aim of this study is to examine the effect of duration of menopause on posture and functional activity in housewives. Between December 2020 and November 2021, the research was carried out. The menopausal housewives (n=42) were included with an age range of 50-65. To evaluate the effect of the menopause period, the people were divided into two groups according to the duration of the menopause, 2-7 years (n=21) and 8-8+ years (n=21). Both groups provided demographic information and information of housework. New York Posture Rating was evaluated for the posture evaluation of the participants. Depression was evaluated with Beck's depression inventroy and, quality of life was evaluated with Nottingham health profile. Using a JAMAR dynamometer, measurements were taken three times from both the dominant and non-dominant hand to assess handgrip strength. TUG and 5XSST were used three times each to evaluate their functional activities. The outcomes were then averaged. Each repetition was followed by a one-minute rest period. As a result of our study, it has been shown that the duration of menopause has no effect on posture and functional activity in housewives.

Key words: menopause, housewives, posture, functional activity.

ÖZET

Beğenen, B. (2022). Covid-19 sürecinde ev kadınlarında menopoz süresinin postür ve fonksiyonel aktivite üzerine etkisi. Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü, Fizyoterapi ve Rehabilitasyon Bölümü, Yüksek Lisans Tezi, İstanbul.

Literatürde menopoz süresinin ev kadınlarındaki postür ve fonksiyonel aktiviteye etkisiyle alakalı bir çalışma bulunamamıştır. Bu çalışmanın amacı ev kadınlarında menopoz süresinin postür ve fonksiyonel aktivite üzerine etkisini incelemektir. Çalışma Aralık 2020 ile Kasım 2021 tarihleri arasında 50-65 yaş aralığında menopoza girmiş 42 ev kadını dahil edilmiştir. Menopoz süresinin etkisini değerlendirmek için kişileri menopozda bulunma sürelerine göre 2-7 yıl (n=21) ve 8-8+ yıl (n=21) olmak üzere 2 gruba ayrılmışlardır. Her iki gruptan da demografik bilgiler ve ev işleriyle ilgili bilgiler alınmıştır. Katılımcıların postür değerlendirmesi için New York Posture Rating kullanılmıştır. Depresyon değerlendirmesi için Beck's Depression Inventory ve yaşam kalitesini değerlendirmek için Nottingham Health Profile kullanılmıştır. El kavrama kuvvetini değerlendirmek için hem dominant ve nondominant elden 3 kere JAMAR dinanometre ile ölçüm yapılmıştır. Fonksiyonel aktivitelerini değerlendirmek için Timed Up and Go ve 5 kez otur kalk testi üçer kere uygulanmıştır. Sonuçların ortalaması alınmıştır. Her tekrardan sonra 1 dakikalık dinlenme süresi verilmiştir. Çalışmamızın sonucunda ev kadınlarında menopoz süresinin postür ve fonksiyonel aktivite üzerine etkisi olmadığını göstermiştir.

Anahtar kelimeler: menopoz, ev kadınları, postür, fonksiyonel aktivite

1.INTRODUCTION AND PURPOSE

Females made up 49.9% and males made up 50.1% of the population of Turkey. In Turkey, the proportion of those 15 years of age or older and in employment was 45.7%. Females had a proportion of 28.7%, while males had a proportion of 63.1% (1). Because of the low employment rate of women in Turkey, homewives make up a large part of society and its core. (1,2).

The role of these housewives at home is central, as they are caretakers of houses and families (3). Household duties, which are often assigned to women due to traditional gender norms, are demanding tasks that must be completed on a regular basis (4,5). Housewives' time is divided into work and leisure time. While the housekeeping, cooking, taking care of their children, and taking care of their husbands make up their work areas, the remaining time is free (6).

Asymmetric loading on the body disturbs the balance in the musculoskeletal system because of the difficulty and repetition of housekeeping (7). Many women do not have good posture unless they make extra efforts to preserve it, as many variables contribute to the deterioration of good posture in daily life (8).Situations such as staying in the same position for long hours, having excessive forward activities while standing or sitting, trying to do all the tasks consecutively without resting, not paying attention to one's physical health while doing the work, and having no health priority can cause excessive stress in the upper extremity and waist areas.

Human posture is the kinematic relationship between the positions of the body joints at a given moment (9). Healthy posture was described by the American Academy of Orthopaedic Surgeons' Posture Committee in 1947 as a state of muscular and skeletal equilibrium that prevents the body's supporting structures from injury or progressive deformity (10). The ability to move is one of the most significant characteristics of the musculoskeletal system. This is a requirement, and proper posture alignment also increases the quality of the movement's components. Furthermore, good posture aids in the proper execution of the following motions (11). Posture is an important health indicator, as postural irregularities are linked to a variety of illnesses (12).

One of the important changes in a woman's life is menopause. The World Health Organization defines menopause as a woman's absence of menstruation for one year as a

result of a decrease in ovarial functions (13). Considering that the average age of menopause is 51 years old, more than a third of a woman's life passes as menopausal (14). Women's musculoskeletal, urogenital, metabolic, and vascular changes all have an impact on the basic properties of bone and muscle throughout menopause. There is a reduction in bone mass density, a general decrease in muscular strength, and a decrease in endurance-type muscle fibers as estrogen levels drop. Poor posture can be caused by changes in muscle function and chronically shortened soft tissues. When this is combined with incorrect postural habits, the situation becomes even worse.

Excessive thoracic kyphosis (Dowager's hump), hyperlordosis, forward head, knee flexion, genu valgus or varus, enhanced pronation or supination postural abnormalities in the foot are all caused by mechanical and hormonal changes during menopause. Pain that worsens with movement, decreased range of motion, and decreased endurance have all been reported as a result of these postural problems (15).

Studies have shown that loss of muscle mass and strength during menopause is associated with a decline in physical function, disability, falls, and a decrease in grip strength (16,17) . When all of these conditions come together, there is a reduction in functional activity as well as a reduction in quality of life.

The aim of this study is to investigate the effect of the duration of menopause on the posture and functional activity of housewives.

Two hypotheses were identified in this study:

Hypothesis 0 (H0): There is no effect of the duration of menopause on posture and functional activity in housewives.

Hypothesis 1 (H1): There is an effect of the duration of menopause on posture and functional activity in housewives.

2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1. Menopause

Menopause is the permanent cessation of menstruation because of loss of ovarian follicular function. It required 12 months of amenorrhea for the diagnosis of menopause (18). Menopause is a Latin word where “Meno” means month and “pause” means to stop (19).

Menopause is a condition every woman will experience as she gets older. It is a normal stage in a woman's life, not a disease. Menopause is universal but also particular (17,19). It is a transition from the reproductive period to the non-reproductive period in a woman’s life (20).

The number of postmenopausal women worldwide is estimated to increase from approximately 400 million in 1996 to 1.2 billion by 2030. 6.000 women a day enter menopause. The menopause phase has been lengthened because of technological advancements that have increased life expectancy and quality of life. Women spend about a third of their lives with menopause. The average age of menopause is 51, and 46.5 in our country. Because many factors influence the age at which women enter menopause, there is a wide range of menopause onset ages. It's linked to general health, social position, smoking, alcohol, education, body mass, malnutrition, vegetarianism, ethnic differences, menarche age, and nulliparity, but the genetic element has the most impact (14,21). There are two types of menopause described by Igno and Ako: premature and natural menopause. While natural menopause occurs in the 40s and 50s, premature menopause happens with surgery. Natural menopause is the menstrual flow stop. Premature menopause occurs in a woman who has no uterus or fallopian tubes (22). The natural age of menopause can be a sign of current health or even future health. Early menopause is a risk for cardiovascular diseases, osteoporosis, but reduces the risk for breast and ovarian cancer (23). In a study, it was observed that the quality of life of women decreased with the increase in the duration of perimenopause (24).

Menopause is a complex process that is psychosocial besides a biological situation. Many changes occur in a woman's body through menopause. Hormonal, psychological, and physical changes include them. Joint pain, muscle pain, sleep problems, urinary problems, forgetfulness, hot flushing are examples of these. It can be

seen along with some issues because of hormonal changes. In the long term, osteoporosis, cardiovascular diseases, cognitive decline, and urogenital problems may be detected (25).

The determining factors of the menopause experience are sociodemographic, attitudes, beliefs, knowledge, co-morbidities, mental health issues (26).

2.1.1.Physiology of menopause

Every healthy woman experiences the menstrual cycle and menopause (27). Menopause is the end of menstruation (28).

Menopause is a natural process that comes from differences in the balance of sex hormones. Because of all the changes, a new state of low estrogen and high follicle-stimulating hormone (FSH) and luteinizing hormone (LH) occurs.

Hormonal changes seen with menopause show a slow and long course. A woman is born with approximately seven million ovarian follicles. This number declines from birth to menopause, particularly in the mid-30s and 40s (29). When the ovarian follicles are finished, progesterone decrease, and the amount of estrogen hormone required for the growth of the endometrium cannot be produced. Estrogen is the crucial hormone of menopause and its deficiency causes irregular menstrual cycles, hot flashes, and night sweats (22,28,29,30).

Estrogen inhibits FSH during the menstrual cycle, then when estrogen falls, FSH rises because of feedback. However, some changes occur in hormones with menopause. After the last menstrual cycle, the estrogen level drops. Androgen production has been shown to decrease with menopause while at its peak levels in the third decade of life. Testosterone levels decrease in postmenopausal women compared to younger women. Low testosterone levels can lead to melancholy, fatigue, a loss of muscle mass and strength, and an increased risk of osteoporosis (31).

FSH levels in the blood can sometimes be used as a biochemical indicator of menopause. An increase in the LH hormone, which is associated with hot flashes, is also observed, though not as quickly as the FSH hormone.

Ovulation may not occur in every menstrual period. Bleeding occurs when estrogen levels drop. Because of the decrease in estrogen in menopause, the period is

irregular, painless, and heavy. It is observed that the menstrual cycles shorten and usually last 18-24 days until menopause. Then the prolongation of the cycle time and the missed periods follow. Eventually, periods stop completely with menopause (27,28,29,30).

2.1.2.Stages of Menopause

The three stages of menopause are perimenopause, premenopause, and postmenopause.

Perimenopause:

It means about or around menopause. The term is used to represent the one or two years just before menopause, or the entire reproductive period before menopause. It can be aged 37 to 43.

Perimenopause is not clear, but one model argues it happens in stages. They claim that while neurohormonal changes and the length of the menstrual cycle increase in the early period, irregular menstrual cycles, longer menstrual cycles, or shorter cycles may be seen in the long term. Perimenopausal women may experience menopausal symptoms like hot flushing, irregular bleeding, vaginal dryness.

Climacteric can be used synonymously with perimenopause. This period, which includes both before and after perimenopause, is longer (22,31,32).

Premenopause:

Premenopause covers the entire reproductive period. It can happen between 40-50 ages and can last five years or more (22,32).

Postmenopause:

The word "postmenopause" refers to the time following menopause (34). Because of hormonal shifts, there is no ovulation and no bleeding during this time. Symptoms of menopause may be alleviated.

The STRAW (Stages of Reproductive Aging Workshop) helped women figure out where they are in the reproductive aging process. The Stages of Reproductive Aging

Workshop (STRAW) proposed a system that divides female reproductive aging into five stages before the final menstrual period, and two afterward (Figure 1.1).

Three stages (early (–5), peak (–4), and late (–3) reproductive) describe the years beforethe perimenopause. Stage –3 is characterized by regular cycles but elevated levels of FSH in the follicular phase. Stage –2 (the early menopause transition) is characterized by variable cycle length. Stage –1 (late transition) is characterized by two or more stopped cycles and 60 or more days of amenorrhoea. Stage +1 is the first 5 years after the final menstrual period. Stage +2 is the late postmenopause (33,35).

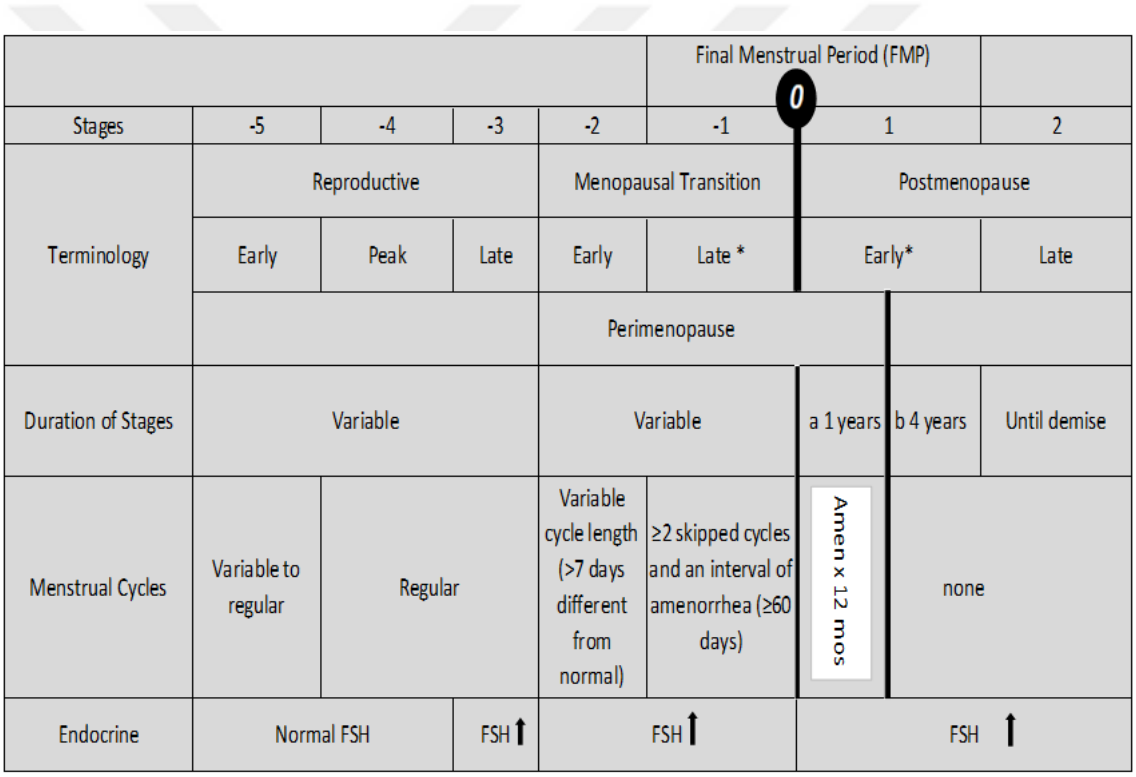

Figure 2.1. Stages of Reproductive Aging Workshop (STRAW) (33)

2.1.3.Symptoms Of Menopause

Menopause is a significant time in a woman's life when many changes occur. Because they are exposed to many negative stimuli, it can be an unpleasant experience.

Menopause is viewed as a negative in fewer societies (22,34). Symptoms can start during perimenopause and last well into postmenopause. Menopause is affected by cultural, social, and psychological factors.

Menopause has many symptoms, and it's during the transition to menopause that can affect women's physical and emotional well-being and quality of life (28,36). While some symptoms appear directly because of the estrogen hormone in menopause, some occur indirectly (28). A third of women suffer severely from symptoms, while some go through menopause with mild or no feeling (37). Studies have presented that estrogen is associated with vasomotor symptoms, vaginal dryness and sleep difficulties, and depression (38). The most common symptoms are hot flashes, night sweats, and vaginal dryness. In addition, pelvic pain, fatigue, loss of libido, gynecological symptoms, memory problems, lack of concentration can be seen in women. While menstrual irregularities, hot flashes, night sweats, and sleep disturbances are common in the transition to menopause, postmenopausal symptoms include vaginal dryness, vulvovaginal atrophy, and lower urinary tract complaints (22,39).

A hot flash is a sudden feeling of warmth that lasts for a quick time. It is one of the most common symptoms seen in almost half of women in the period just before menopause. It lasts approximately 5.2 years and can continue after menopause in 1 in 4 women (38). Estrogen deficiency causes decreased libido and urinary problems. Although sleep issues occur as people age, they are more common in women because of vasomotor symptoms associated with menopause. Hot flashes and night sweat negatively affect sleep. Depression is one of the most common diseases. Decreased quality of life because of the negative effects of menopausal symptoms and hormonal changes increases the risk of depression. During the menopausal transition, there is a 2 to 4 times more chance of experiencing depressive episodes compared to premenopause.

Considering all these symptoms, they affect the woman’s life severely and they are not only physical but also psychological. The symptoms are very particular. Some may be very severe, while in others they may be so mild that someone cannot have felt them (22,38).

2.1.4.Common Problems During Menopause

The most common problems in menopause are cardiovascular diseases, genitourinary problems, osteoporosis, depression, cognitive problems.

Cardiovascular Disease:

After menopause, women's risk of cardiovascular diseases increases because of the decrease in estrogen hormone. Chronic diseases, lifestyle, weight, smoking, hypertension, decreased glucose tolerance, abnormal plasma lipids, vascular inflammation, and family history are also risk factors. The mortality rate from cardiovascular disease in post-menopause is 75-76%. Measures to combat such a high rate should not be overlooked, and this issue should be given full consideration (39,40).

Genitourinary problems:

With the effects of age and menopause, women experience vulvovaginal atrophy (VVA) and lower urinary tract symptoms. With the decrease in estrogen, the vagina becomes shorter, loses its flexibility, and cannot perform its old functions. 45% of postmenopausal women experience VVA. This discomfort causes vaginal dryness and negatively affects women's sexual and daily lives.

The direct effect of urinary tract symptoms on menopause is still unclear. However, it appears as a complaint among postmenopausal women (22,23,28).

Osteoporosis:

It is a progressive systemic bone disease that causes deterioration in the micro-architecture of bone tissue and low bone mass. Osteoporotic fractures increase mortality and morbidity. Loss of cortical bone because of estrogen deficiency, and especially vertebral bodies and the distal radius, are affected (39,41). It brings along postural disorders because of tissue loss of bones. Along with pre-existing chronic posture disorders, kyphotic posture is added, resulting in deterioration of the person's bodily integrity. With kyphosis, the body's center of gravity falls forward, and the increase in balance problems increases the risk of fracture. Regeneration and reduction of healing mechanisms with age increase the severity of the fracture (15).

Since the risk of fracture in osteoporosis is very high, they decrease their quality of life and lead a sedentary life because of avoidance of physical activity.

Depression:

It is common in premenopausal women in their early 40s and young adults. Women are twice as likely to be affected by depression than men (38). Some argue there are vasomotor and physical symptoms as a secondary approach, as well as hormonal changes, neurotransmitters, and the relationship between depression and menopause. But, the mechanism of action is not clear (35).

Although the relationship between depression and menopause is because of the decrease in estrogen, there are findings that the risk of depression increases slightly during the menopausal entry phase, but there is no increase in the risk after menopause (36). In some studies, it has been revealed that psychological symptoms are more common after menopause. Studies have shown that it would be beneficial to closely monitor the emotional state of women with a history of mental illness, early menopause, and chronic illness (22,35,2).

Cognition problem:

With age, especially after the age of 50, difficulties in activities such as memory, recall, calculation, problem-solving, concentration, and focus are expected. With menopause, this process can be faster and progressive (22).

Estrogen plays a crucial role in the brain's glucose regulation and in performing the functions of the brain, neurogenesis, and memory. In addition, it has an important role in the production of acetylcholine, which plays an important role in-memory processing and attention. The decrease in estrogen with menopause affects women negatively and reduces their quality of life (38,42).

While 31% of premenopausal women had problems with forgetfulness, 41% of postmenopausal women stated they had problems. During the onset of menopause, the focus, concentration, slowdown in producing solutions, and a decrease in cognitive performance of the person called brain fog, which affects daily life, are frequently observed. After menopause, women are at increased risk of developing cognitive difficulties (42,43).

2.1.5. Physical Changes in Menopause

There is a decrease in muscle mass with age. Disorder of the balance between muscle protein production and destruction, traumas, stress, inflammation, and hormonal changes that come with menopause has an additional negative effect.

The decrease in muscle mass starts in the 30s and progresses seriously in the 50s. A significant decrease is noticed, especially in the first three years of menopause (44). Studies have shown that muscle fat increases and muscle strength and endurance decrease. Different conclusions have been reached regarding the relationship between menopause and muscle weakness. There are no noticeable results that estrogen deficiency directly causes muscle weakness, but there are relevant studies. But some studies show it is not significant. More studies are needed to explain this issue.

Because of hormonal changes, women have lower physical performance than men due to decreased physical function, bone quality, neuromuscular functions, and bone strength. Prolonged inactivity can cause muscle atrophy, decreased strength, pain, and loss of function. They have difficulty sitting, standing, walking, climbing stairs, and doing activities that require balance. (22,38,45).

Because women live longer than men, they have to cope with complications much longer. In addition, functional losses because of old age and menopause begin earlier (44,46).

2.2. Posture

Posture is a composite of the positions of all the joints of the body (9). One of the most essential variables for determining a person's health status is posture assessment. Many variables affect posture, such as gender, age, race, body type, occupation, weight, emotional state. Many methods are used in the evaluation (47). Visual observation methods are the most widely used evaluation methods. Recently, the most popular photographing methods have been. But Radiography is considered the gold standard (48).

The most important feature of the musculoskeletal system is movement. Right posture improves the quality of movement. Good posture is the balance of the musculoskeletal system that protects the body against future deformities and produces maximum work power with minimum energy and stress. (9,10,49). The body cannot do the intended movement with the desired energy and form if it has poor posture. Other musculoskeletal problems may occur as the body tries to compensate for its condition.

Because of compensation, pain in the body and a decrease in the quality of life can be observed. Muscle shortness test, muscle strength, normal joint range are important parameters for posture analysis.

There are two types of posture: active and inactive. Inactive posture while sleeping and resting; active posture ensures that many muscles work actively and maintain the posture. There are two types of active posture: static and dynamic. In a static posture, there is no movement; it is the result of muscles and joints resisting gravity with isometric contractions. Dynamic posture allows the body to adapt to changing surroundings and provides the foundation for mobility. Anti-gravity muscle groups are the ones that are used for posture. They are fan and multi-pennate, fatigue-resistant, and powerful (49) .

Posture occurs with a postural reflex. The desired activation arises because of efferent reactions to afferent stimuli, and the required posture is produced. Receptors, ears, eyes, and muscles are significant in the development of posture. In postural control, coordination is provided with visual and auditory stimuli by stimulating the central nervous system, joint, muscle, and tendon receptors. The major centers that provide coordination are the cerebral cortex, cerebellum, reticular formation, and proprioceptive pathways (50).

In the standard position, the head is upright and in the middle; the spine is normal; the pelvis is neutral, the chest and back can perform optimally, and the lower extremities are in an ideal alignment to carry the weight of the body. The standard position is the ideal posture (9,49).

The body is evaluated from 3 different angles, from the front, the back, and the side, while assessing the posture. The intersection of the mid-sagittal and coronal planes of the body forms a line similar to the gravitational line. This line is a sign of postural alignment. Help is taken from the pendulum rope in finding the places where gravity passes. Usually, the outer edge of the ear is taken as the beginning. In ideal posture, the points where the plumb line should pass: 3-3.5 cm in front of the ankle joint, slightly in front of the knee joint, slightly behind the hip joint, behind the center of the lumbar vertebrae, over the thoracolumbar junction, in front of the center of the thoracic vertebrae, at the cervicothoracic junction over (C7), slightly posterior to the center of the cervical vertebrae and over the mastoid process. From the posterior view, equal and symmetrical

as it travels past its middle. It travels through the midpoints of the heels, knee joints, and all spinal spinous processes, as well as the center of the skull.

3-3.5 cm anterior to the lateral malleolus, posterior patella, trochanter major, midpoint of the shoulder ridge and earlobe are the points where gravity passes through the body and is counted as a reference.

When the ideal posture is viewed from the posterior, the head is in a neutral position, the cervical vertebrae are straight, the shoulders are level, the medial edges of the scapula are parallel and equidistant to each other in a neutral position, the thoracic and lumbar vertebrae are straight, the posterior and superior spines are in the same plane, and the pelvis and hip joint are in a neutral position , lower extremities straight and feet slightly externally positioned and parallel.

Types of Posture:

4 types of postures emerge because of the lateral posture evaluation: standard posture, kyphotic-lordotic posture, flat back posture, and sway back posture.

In the kyphotic-lordotic posture, the head is forward, the cervical vertebrae are hyperextended, the scapula is adduction, the thoracic vertebrae are flexion (kyphosis), the lumbar hyperextension is increased (lordosis), the anterior pelvic tilt, the hip joint is flexed, the knee is slightly hyper-extended, and the ankle is slightly plantar flexed. Neck extensors and hip flexors and lumbar extensors are shortened. Neck flexors, upper thoracic extensor, and external obliques are elongated and weak.

In the flat back posture, the head is forward, cervical vertebrae slightly extended, upper thoracic flexion increased, lower thoracic part straight, reduced concavity in lumbar vertebrae, posterior pelvic tilt, hip and knee joints are in extension, the ankle is slightly plantar flexed. Hip flexors, back extensors are elongated and weak, the hamstring is short and strong.

In the sway-back posture, the head is forward, cervical vertebrae are slightly extended, thoracic vertebrae with increased flexion, lumbar vertebrae are flattened, posterior pelvic tilt, knee and hip joints are hyper-extended. Hip flexor and external oblique, neck extensor, and thoracic extension are lengthened, hamstring and internal obliques are shortened.

When viewed from the posterior, there are three types of postures: The standard posture and the gravity line are the postures in which the body is left or right regarding the midline. The presence of deviations is related to the dominant side (9,49).

2.2.1.Aging and Posture

Aging is an unstoppable and irreversible process . Aging is a complex process that takes place under the influence of many biological systems and environmental factors. Physical, psychological, and social changes take place in people's lives. There are many types of aging: biological aging, psychosocial aging, emotional aging, functional aging, and healthy aging (51).

Postural changes associated with aging are a combination of primary and secondary aging factors. Primary aging is related to time, secondary aging changes and environmental influences such as nutrition, injury and hypokinesia.

Common Postural Changes in Aging

The most common change is the anterior head, increased thoracic kyphosis. It causes digestion and functional losses in the person. Mostly lumbar lordosis decreases with advanced age. Although it is very rare, lumbar lordosis may become kyphotic in some elderly people.

Scapular protraction and abduction position impair the scapulohumeral rhythm and may cause painful movement.

Elbow joint movement limitation, ulnar deviation in the wrist, and finger flexion in the wrist are very prevalent and cause loss of hand functions.

Hip and knee flexion contractures reduce stride length, increase the energy required for postural control and mobility, and disrupt the balance of the body.

The pelvis tends to posterior tilt, and the lordosis flattens. Anterior pelvic tilt can also be seen with weak abdominal muscles.

Some studies show deterioration in cervical vertebrae after the age of 50 and 60. 80% of those older than 55 years of age had spondylosis, and according to Friedenberg and Miller's study, 75% recorded degenerative changes in their 70-year-old participants. In the elderly, calcification is seen in the anterior part of the annulus and cartilage plates protrude forward (51,52).

2.2.2. Posture and Menopause

Menopause deals with the period of women's lives when they are not productive. Menstruation has stopped and the ovulation function has stopped. After the age of 40, women undergo hormonal changes with age, and changes occur in their bodies. When the strength of the muscle tissue and endurance fibrous muscles is decreased, poor posture because of chronically shortened tissues and when added to the previous bad posture, endurance and function losses are observed (22,28,38).

Women of this age have a very high risk of osteoporosis because of the low level of estrogen in menopause. Osteoporosis is a systemic bone disease in which bone density and quality are decreased. Regardless of trauma, the risk of fracture is very high with weakness and destruction of bone tissue (41).

Because of mechanical and hormonal changes in menopause, excessive thoracic kyphosis (Dowager's hump), hyper-lordosis, the head is forward, flexion in the knees, genu valgus, or varus, increased pronation or supination postural disorders in the feet (15).

2.2.3. Posture and Housewives

The rate of housewives in our country is high. Because of the role that society has drawn on women, it is enforced that women's lives should be central to housework and their children. Repetitive, demanding housework and taking on tasks alone causes physical and emotional stress. When existing postural abnormalities are combined with this stress, women's quality of life and functional status suffer significantly (3,4,5).

Women make a lot of effort while doing housework. They use it while doing housework, especially when using their upper extremities, which may cause pain or musculoskeletal problems. When pre-existing postural abnormalities or doing these duties in the incorrect position are combined with extreme workloads, maintaining their body composition becomes even more challenging. Doing the housework in the wrong posture (bending, kneeling, or squatting position), pain in the lower extremities and back; Doing the dishes, washing, and cleaning has been associated with pain in the upper extremity (2,7,53).

Women do not have a good posture unless they aim for it because many factors negatively affect posture. While women are in a hurry to finish their housework in a short time, they ignore their health. The physical difficulty and continuousness of housework

can cause them to stay in the same or wrong position for a long time. Because of this intense workload, problems arise because of overloading the upper and lower extremities. Besides these, delaying the rest time, thinking about the things that should be done by being mentally busy, and the lack of working hours affect the posture negatively. Due to such an intense workload, housewives prefer to rest rather than exercise (54). This causes a delay in preventing or treating postural disorders.

As women pass through puberty, adulthood, pregnancy, and menopause throughout their lives, changes in their posture occur. Hormones, exercise, diet, job, marital status, having children, emotional state, medical history, age, social behaviors, lifestyles are among the factors (41).

When we look at the most common postural disorders in women, excessive thoracic kyphosis, scoliosis, hyper-lordosis or hypo lordosis, the head is forward and shoulder protraction, genu valgus or varus, increased pronation or supination are seen (15).

2.1.6. Coping with menopause

Menopause symptoms are a natural process to be experienced. Women can go through this process more comfortably with minor changes they can make in their lives.

Exercise is the key to a healthy life. Making a habit of aerobic exercise, swimming, walking, cycling 3-4 times a week for 30-40 minutes will be good for the body and mental health. Besides increasing muscle strength, bone strength, posture, and endurance, it also affects hot flashes while raising the mood with the endorphins released during exercise.

Maintaining a sleep routine of 7-8 hours, eating healthily, avoiding alcohol and smokes, maintaining weight, controlling stress, and maintaining a positive attitude will all help women pass through menopause lightly (22,28).

3. MATERIALS AND METHODS

3.1.Subject

This study was carried out in Bursa between December 2020 and October 2021. The menopausal women (n=42) between the ages of 50 and 65 took part in the study.

The sample size of the study was determined as 42 people according to the power analysis with Gower 3.1 Power Analysis (80% power and 0.05 type 1 error). The study protocol was approved by the Yeditepe University Ethical Committee on the date of 02.09.2021 with issue number 202105028 (Appendix 1).

According to the reference study, 42 housewives aged 50-65 who had been in menopause for at least 2 years were included. These women were divided into two according to the duration of menopause. Women with a duration between 2 and 7 years of menopause were included in the first group, and those 8 and above were included in the second group. There were 21 women in each group. The inclusion and exclusion criteria of this study were mentioned below.

1.Inclusion criterias:

- Being a woman,
- Being a housewife,
- Age between 50-65,
- The duration of menopause is between 2 and 20 years
- Volunteering to participate in the study was included.

2.Exclution criterias:

- To be working,
- Having endocrine diseases,
- Having visual or hearing impairment in a way that prevents communication,
- A history of surgery within the last 6 months,
- The duration of menopause is less than 2 years
- Using depression medication was excluded.

3.1.1.Study Protocol

The menopausal women (n=42) voluntarily participated in the study. All participants were informed about the study before the start of the assessment. The informed voluntary consent form was filled in for those who wanted to participate in the study (Appendix 2). Participants were divided into two groups according to their menopause duration. New York posture rating, Nottingham health profile, Beck's depression inventory, handgrip strength assessment, 5 sit-stand tests, timed up and go were evaluated in both groups. Handgrip strength assessment, 5 sit-stand tests, timed up and go were performed 3 times, and 1-minute rest was given between repetitions.

Evaluations took approximately 45 minutes. The study was conducted face to face with the participants.

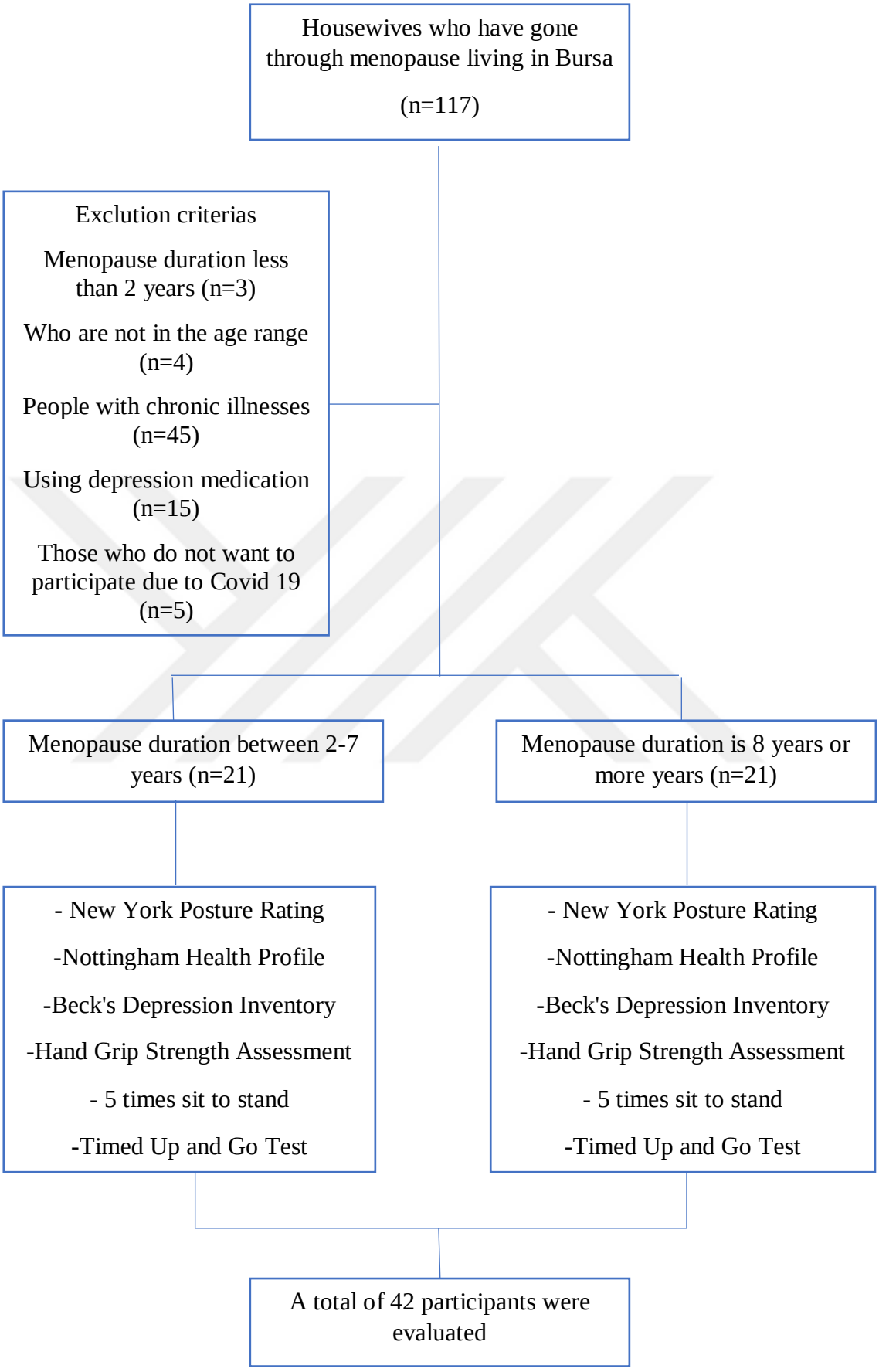

Figure 3.1. Flow chart of the study

3.2.Evaluation

It took 3 months for the participants to be determined according to the criteria of the study and for the evaluation of the participants. Six different evaluations were used to evaluate the participants. Two of them are in the form of questionnaires. Others had a physical assessment.

3.2.1. Demographic characteristics of the participants

General Information Evaluation Form contains information about the demographic and general health status of the participants.

Questions about the demographic and social status of the participants such as demographic characteristics, socio-demographic conditions, menopause duration, health status, employment status, education status, housework information and sports habits were answered. General Information Evaluation Form was filled face to face (Appendix 3).

3.2.2. Evaluation of Posture

New York Posture Rating is a valid and reliable assessment used in posture assessment. The NYPR includes a set of three-figure drawings for each of 13 body alignment segments contributing to overall postural alignment (55,56). The participants are evaluated from the posterior and lateral.

Before the evaluation, the participants were asked to wear as little clothes as they could feel comfortable or to wear comfortable clothes that would show their body lines.

The participants were asked to stand with bare feet and face the opposite wall in a comfortable position with an equal load on both feet. They were asked to hold their positions until the end of the evaluation.

When examined from a posterior: the position of the head, the level of the shoulders with each other, the straightness of the spine, and the levels of the two sides of the hips and feet are evaluated.

When viewed from the lateral, the foot arch, head, thorax, shoulders, upper back, trunk, abdomen, and lower back are evaluated.

Whichever of the three pictures available for each body segment fits the person is marked. Each body segment was scored 5 (correct posture), 3 (slight deviation), or 1

(pronounced deviation). 13 sections are scored in this way and form the total score evaluation score.

Because of the evaluation, the highest 65 is the lowest 13 points. The improved standard for this test, if the evaluation criteria total score is ≥45 ‘’very good ”, 40-44 ‘’good”, 30-39 ‘’middle’’, 20-29 is” weak “and ≤19 is” bad “(55) (Appendix 4).

3.2.3. Evaluation of Depression

Beck's Depression Inventory was used to assess depression status. It is a valid and reliable questionnaire that evaluates the somatic, sensory and cognitive symptoms of depression.

First, people were explained about the purpose of the test and what we wanted to evaluate. The privacy of the participants was respected. They are made to feel comfortable and safe. Explanations were made for the questions they could not read or understand.

Beck depression test is a questionnaire consisting of 21 questions. Each category consists of 4 evaluation items. The items were ranked from the least depressive to the most severely depressed.

Subjects were asked to choose a sentence describing how they felt in the past week, including today. They were asked to choose the sentence that came closest to them. There is no time limit.

The total score was determined by adding the scores of the selected sentences. Scoring was done between 0-63. If the total score was between 0-10, it was scored as “no depression”, 11-17 as “mild depression”, 18-23 as “moderate depression” and 24 and above as “severe depression”. High scores show a high depression level (57) (Appendix 5).

3.2.4. Evaluation of Health Status

The Nottingham Health Profile is used to assess health status. Participants were given information about the test. They answered the participants could be comfortable and without time constraints. Incomprehensible questions were explained.

First, they were asked to answer yes or no to 38 questions in Section 1 and then 7 questions in section 2. For questions they were unsure of; they were asked to mark the answer closest to them.

The scores of each answer to the questions were summed and the scores of the sections were scored out of 100 separately. Then, all the scores in Section 1 were combined and evaluated over 600, and the scores of section 2 were noted among themselves. If the total score approaches 100, it shows low health (58) (Appendix 6).

3.2.5. Evaluation of Functional Activity

Hand grip strenght, 5 times sit to stand and timed up and go tests were used to evaluate the functional activities of the participants.

3.2.5.1. Evaluation of Hand Grip Strength

Grip strength is considered being an indicator of the muscle strength of the upper extremity (17). JAMAR Hand dynamometer was used to assess handgrip strength.

Participants were given information about the test. Participants were shown how to do the test in practice before the test. In all circumstances, the examiner or an armrest should not support the arm.

This test was performed in a position approved by the American Association of Hand Therapists (ASHT) (59).

This testing position is described as:

- Sitting in a straight-backed chair with the feet flat on the floor.
- The shoulder is adducted and neutrally rotated.
- Elbow flexed at 90 degrees, forearm in a neutral position.
- The wrist between 0 and 30 degrees extension and between 0 and 15 degrees ulnar deviation.

In this position, the person was asked to squeeze the tool as much as she could with all her strength. The pictures were taken while gripping (Figure 3.2.).

They were completed three times in each hand, with a one-minute rest period in between. The findings were compared and the average was calculated.

Figure 3.2. JAMAR Hand dynamometer

3.2.5.2. 5 Times Sit to Stand

This is one of these functional tests, evaluates individuals' ability to get up from a chair. This test has one of the important tasks that show the functionality and independence of patients in their activities (60,61). Our aim with this test is to evaluate the lower extremity strength and functional performance of the individual.

Participants were given information about the test. Participants were shown how to do the test in practice before the test.

- The participant is seated in a chair without armrests. At any stage of the evaluation, the back of the chair was not touched
- She was asked to cross her arms across her chest.
- She was told that her feet should be firmly on the ground. Her legs should not be together. They should be at shoulder level.

- She got up with no support with all her strength and sat down again in an upright position. She continued to sit and stand 5 times. There was no pause in between. The physiotherapist counted each time and informed the person.
- We timed the 5 repetitions from the start of the instruction to the end of the fifth stand with a stopwatch.

It has been reported that she can stop the test from time to time in case of any dizziness, weakness, feeling unwell, or unwillingness to do it. The test was abandoned if help was necessary or if the move could not be accomplished.

The test was repeated three times with one-minute rest periods in between. The findings were compared, and the average was calculated.

3.2.5.3. Timed Up and Go

With this test, the physical mobility, balance and walking speed of the individual are evaluated (62).

Participants were given information about the test. Participants were shown how to do the test in practice before the test.

- The participant started the test in an armless chair with a backrest.
- It is marked 3 meters ahead of the starting point.
- The participant got up from the chair with the go command and moved comfortably and safely to the line 3 meters ahead, then came back and sat on the chair safely with the same walking style.
- The time started with the command, and the chronometer was stopped when she sat on the chair again. The time is noted.

The participant wore everyday shoes and walked with an assistive device as if using it. No physical support was given.

It's been done 3 times. 1-minute rest breaks were given. The average of the results was evaluated.

3.3.Statistical Analysis

'The Effect of Menopause Time on Posture and Functional Activity in Housewives During Covid-19' was determined by the Power of at least 80% and Type-1 error of 5% for each variable in calculating the sample size of the study. In the study, the normality distributions of the measurements were given according to the results of the

Shapiro-Wilk (n<50) test. In comparisons according to groups; While “Parametric tests (Independent T-test)” were used for the measurements with normality assumptions, “Nonparametric tests (Mann-Whitney-U Test)” were used for the measurements without normality assumptions. The Chi-square test was used to determine the relationships between categorical variables. Descriptive statistics for continuous variables in the study Expressed as “Mean±Standard Deviation, Median (Min-Max)”. Statistical significance level (a) was taken as 5% in the calculations and SPSS (IBM SPSS for Windows, ver.25) statistical package program was used for analysis.

4.RESULTS

Our evaluation based on the evaluation of the posture and functional activities in menopausal women (n=42) aged 50-65 years.

The groups were divided according to the duration of menopause. Those in the 1. group were in menopause for 2-7 years, and the 2. group were in menopause for 8 years or more.

The demographic characteristic of participants includes, values of mean age of the 2-7 years and 8-8+ years are presented in Table 4.1. There was no statistical difference in groups in terms of age between groups according to the independent samples t-test ($p>0.05$).

Table 4.1. The demographic characteristics of Participants

	1. Group Mean ± SD	2. Group Mean ± SD	t	P Values
Age	56.90 ± 1.84	56.86 ± 3.31	. 058	*.954*[#]

SD: Standard deviation, # Independent T-test.

Means and SD of body mass index (BMI), dominant side, number of children, and educational status in groups and differences between groups were presented in Table 4.2.

No statistically significant relationship was observed between BMI, dominant side, the number of children, educational status in groups ($p>0.05$). When the BMI of the participants is compared, 12 of them are normal, 16 are overweight, 9 are in obese class1 and 5 are in obese class 2. only 3 people are left-handed. 31 people have 0-2 children, 8 with 3-4 children, and 3 with 5-6+ children. The university has the highest rate in both groups.

Table 4.2. Comparison of BMI, dominant side, number of children and educational statues between groups.

		1.Group (%) N	2. Group (%) N	χ^2	P*
BMI	18,5-24,9	33.3 7	23.8 5	*.644*	*.886*
	25-29,9	38.1 8	38.1 8		
	30-34,9	19 4	23.8 5		
	35-40	9.5 2	14.3 3		
	>40	0 0	0 0		
Dominant side	Right	90.5 19	95.2 20	*.359*	*.545*
	Left	9.5 2	4.8 1		
Number of children	0-2	85.7 18	61.9 13	*3.140*	*.208*
	3-4	9.5 2	28.6 6		
	5-6+	4.8 1	9.5 2		
Educational Statues	Primary	33.3 7	28.6 6	*2.077*	*.557*
	Secondary	4.8 1	19 4		
	High School	52.4 11	42.9 9		
	University	9.5 2	9.5 2		

BMI: Body mass index, N: number, * Ki-kare test, *p<0,05 statistical difference.

The comprations of exercise habit, exercise types, exercise time in groups were represented in Table 4.3.

No statistically significant relationship was observed between exercise habit, exercise types, exercise time in groups ($p>0.05$).

Table 4.3. Comparison of exercise habit, sport types, exercise time between groups.

		1.Group (%) N	2.Group (%) N	χ^2	P*
Exercise habit	None	28.6 6	42.9 9	*1.886*	*.596*
	1-2 time a week	28.6 6	28.6 6		
	3-4 times a week	23.8 5	9.5 2		
	Everyday	19 4	19 4		
	<3 days per month	0 0	0 0		
Exercise types	No exercise	28.6 6	42.9 9	*4.643*	*.098*
	Walking	52.4 11	57.1 12		
	Aerobic	19 4	0 0		
Exercise time	None	28.6 6	42.9 9	*1.135*	*.889*
	<=20 min	9.5 2	4.8 1		
	21-30 min	9.5 2	9.5 2		
	31-50 min	28.6 6	23.8 5		
	>50 min	23.8 5	19 4		

N: number, * Ki-kare testi, *p<0,05 statistical difference.

The relationship between time of housework, housework that takes the most time, how much time is devoted to housework that takes the most time were examined in groups in Table 4.4.

Statical difference was found between groups and housework that takes the most time ($p < 0.05$). Those who spent more time for “cooking” were found to be higher (55.3%) in 2. Group . All of those who took more time for “cleaning” consisted of patients with 1. Group . The majority (81%) of 1. Group spends more time on “cooking”. In 2. Group spends more time for "cooking".

No statistically significant relationship was observed between other variables in groups.

Table 4.4. Comparison of time of housework, housework that takes the most time, how much time is devoted to housework that takes the most time in between groups.

		1.Group (%) N	2.Group (%) N	χ^2	P*
Time of housework	<1 hour	4.8 1	4.8 1	*2.229*	*.526*
	1-2 hours	33.3 7	33.3 7		
	3-4 hours	57.1 12	42.9 9		
	>4 hours	4.8 1	19 4		
Housework that takes the most time	Cooking	81 17	100 21	***4.441***	***.035****
	Cleaning	19 4	0 0		
How much time is devoted to housework that takes the most time	<1 hour	42.9 9	19 4	*2.754*	*.095*
	1-2 hours	57.1 12	81 17		
	3-4 hours	0 0	0 0		
	>4 hours	0 0	0 0		

N: number, * Ki-kare testi, *p<0,05 statistical difference.

The Beck's depression inventory and New York posture score according to groups were showed in Table 4.5.

There were no difference between Beck's depression inventory and New York posture score in groups (p>0.05).

Table 4.5. Comparison of New York Posture and Beck's Depression Inventory in between groups.

		1.Group (%) N	2.Group (%) N	χ^2	P*
Beck's depression Inventory	No depression	76.2 16	76.2 16	*1.667*	*.435*
	Mild depression	19 4	9.5 2		
	Moderate depression	4.8 1	14.3 3		
	Severe depression	0 0	0 0		
New York Posture	Bad posture	0 0	0 0	*.778*	*.378*
	Weak posture	0 0	0 0		
	Middle posture	0 0	0 0		
	Good posture	9.5 2	19 4		
	Very good posture	90.5 19	81 17		

N: number, * Ki-kare testi, *p<0,05 statistical difference.

The parts of the Nottingham Health Profile, which are pain, emotional reactions, sleep, social isolation, physical mobility, energy and part 2 are compared with the group separated according to menopause periods (Table 4.6).

No statistically significant difference was observed in the "Pain, Emotional reactions, Sleep, Social Isolation, Physical Mobility, Energy and Part 2" measurements of the participants according to the group ($p>0.05$).

Table 4.6. Comparison of Nottingham Health Profile in between groups.

	1. Group Mean ± SD	2. Group Mean ± SD	Z	P* Values
Pain	17.94 ± 17.68	17.79 ± 18.69	-.166	.869
Emotional reactions	13.74 ± 17.83	14.27 ± 21.16	-.275	.783
Sleep	11.62 ± 21.72	17.15 ± 25.65	-.645	.519
Social isolation	5.24 ± 9.61	7.64 ± 22.08	-.680	.496
Physically mobility	7.64 ± 10.11	12.72 ± 20.92	-.517	.605
Energy	21.22 ± 33.24	31.24 ± 38.58	-.939	.348
Part 2	.38 ± .74	.29 ± 1.10	-1.183	.237

SD: Standart deviation, * Mann-Whitney-U Test, *p<0,05 statistical difference.

When we compared hand grip strength with menopause duration, no statistically significant difference was found (Table 4.7).

Table 4.7. Comparison of hang grip strength in between groups.

	1. Group Mean ± SD	2. Group Mean ± SD	T	P#
Hand Grip strength (right)	19.14± 3.82	17.64±4.93	1.097	*.279*
Hand Grip strength (Left)	16.95± 5.05	16.54± 4.49	.280	*.781*

SD: Standart deviation, # Independent T-test. *p<0,05 statistical difference.

Correlation between Timed up and Go test,5 Times sit-to-stand in menopausal time were analyzed in Table 4.8.

There is not found statistically correlation between Timed up and Go test,5 Times sit-to-stand in groups.

Table 4.8. Comparison of Timed up and go and 5X Sit-to-Stand in between groups.

	1. Group Mean ± SD	2. Group Mean ± SD	T/Z	P Values
TUG	8.74 ± 1.40	9.18 ± 1.56	T=-.977#	*.334#*
5XSST	10.78 ± 3.16	10.27 ± 3.30	Z=-.403*	*.687**

SD: Standart deviation, TUG: Timed up and Go test, 5X SST: 5 Times sit-to-stand Test, *Mann-Whitney-U Test, # Independent T-test, *p<0,05 statistical difference.

5. DISCUSSION

Our research aimed to evaluate housewives' posture and functional activities according to their menopause times. For this purpose, we divided the times of menopause into 2 groups as 2-7 years and 8-8+ years and compared the participants with each other. The groups had an equal number of participants. In terms of demographic information, age, and BMI, there was no statistically significant difference between the groups. We found that individuals in menopause between the ages of 2 and 7 spent the most time cleaning, whereas those in menopause between the ages of 8 and 8+ spent the most time cooking.

In our study, as a result of the comparison between the groups, there was no statistical difference in posture, depression, quality of life, grip strength of the right and left hands, TUG and 5XSST.

As a result of our research in the literature, we could not find a study similar to the duration of menopause with our study.

In the literature, there are studies on the changes in the posture of women with the effect of age. It has been shown that there is a change between the neck, thorax, and knee with age. There are studies show that cervical lordosis and thoracic kyphosis appear from the age of 50. It has been observed that thoracic kyphosis increases with age in women (63). A total of 113 men and 59 women took part in a study carried by Boyle et al. Thoracic curvature increased in women beyond the age of 45, according to this study (64). Kyphosis has been proven to rise with age in both men and women (65). It is recommended to study preventive and therapeutic methods for this. We did not find a study on the effect of the duration of menopause on posture in the literature. Most of the studies have included posture studies between osteoporosis and healthy women. In this study, 90 postmenopausal women were separated into three groups: osteopenic, osteoporotic, and healthy. They evaluated their body alignment. They found that healthy menopausal women were in better shape than the other groups (66). There is also many research including menopausal women, both with and without the disease. In the study conducted between menopausal women with chronic pelvic pain and healthy menopausal women, a significant difference was found in spinal cervical angles with a forward head posture in women with cronic pelvic pain (67). As in our study, no study has been found

that examines menopause durations with posture. In our study, the duration of menopause did not have a significant effect on posture.

There was no research that looked into the association between depression and duration of menopause. Depression is caused by a variety of circumstances. Women are particularly affected by hormonal changes brought on by menopause and as they progress in age. When 214 premenopausal women and 280 postmenopausal women were compared in a study by Bezircioğlu et al., they discovered that postmenopausal depression symptoms were more common (35). According to M. de Kruif et al.'s meta analyses, it shows that there is no significant increase in the risk of depression in perimenopause performed according to the stages of menopause. There is a higher risk of perimenopause compared to premenopause. It has been shown that the probability of developing depressive symptoms in perimenopause and the severity of depressive symptoms increase compared to premenopause (68). Depressive symptoms were seen at a higher rate in perimenopause than in postmenopause (69). In a study of 108 menopausal women over the age of 50, one in five women was found to be depressed. This ratio does not achieve a significant difference (70). In our study, there was no significant difference in depression between the groups.

We did not find a study evaluating the relationship between duratin of menopause and quality of life in the literature. In the study of Külekci and Kostanoğlu, the quality of life between postmenopausal and non-postmenopausal women was compared. In the study, a significant difference was found between physical activity, sleep, and emotional reaction scores, but not in pain, energy, and social isolation (71). In the study of Blumel JE et al., they used the Menopausal Specific Quality of Life Questionnaire to assess the quality of life. They found a significant relationship between age and sexuality and physical problems but showed no relationship with psychology. Premenopausal and postmenopausal women have a higher risk of reduced quality of life, according to this study. Previous studies have also found that menopause negatively affects women's quality of life (72). As a result, it has been shown that menopause reduces the quality of life (73). No statistically significant difference was found between the groups in terms of quality of life in our study.

A study on handgrip strength and duration in menopause could not be found in the literature. In Schlüssel et al’s study has been observed that the handgrip strength is

the highest at 40, and then it decreases gradually (74). In the study of M. A. da Câmara, a significant relationship was found with handgrip strength when they looked at the stages of menopause. The handgrip strength of premenopausal women was found to be higher than that of postmenopausal women (75). There are also studies with the same results (76). Handgrip strength was assessed in 20 postmenopausal women in Kumar et al.'s study's half of the people who took part had weak or very weak handgrip strength (17). In our study, it was observed that there was no significant difference in the grip strength of the dominant and nondominant hands between the groups.

In the literature, we did not find any study evaluating functional activity according to the duration of menopause. We used the TUG and 5XSST assessments to assess functional activity. Akbari and Mousavikhatir in their study of 101 healthy women between the ages of 21 and 80 showed that TUG decreased statistically significantly from the age of 50. A decrease in physical performance has been observed with age (77). The physical performance of 389 women was examined according to menopause stages in a study done in Brazil. As a result, they discovered that premenopausal women performed better than postmenopausal women (75). In our study was no significant difference in functional activity between the groups.

Our study has several limitations:

- Because the study was conducted during the Covid-19, it was difficult to obtain volunteers and there were a small number of participants..
- Difficulty making face-to-face because of Covid-19.
- We were unable to do a comparison with other research because we could not find a study evaluating the effect of the duration of menopause on posture and functional activity in our literature search.

As a result of our study, more studies are needed to examine the effect of duration of menopause on posture and functional activity in women. As a result of our study;

- It has been shown that the duration of menopause has no effect on posture and functional activity in housewives.

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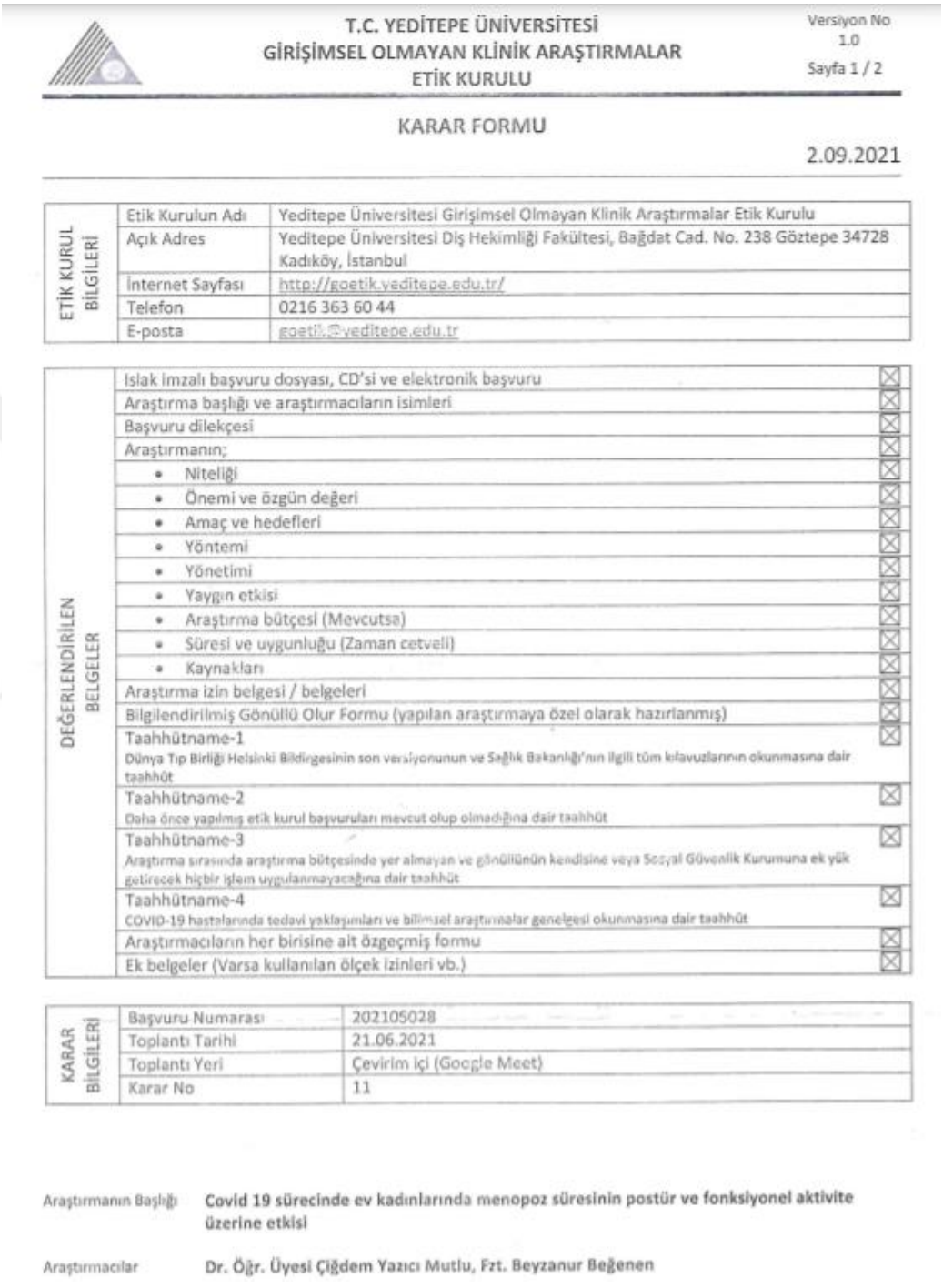
7.APPENDIX

7.1. Appendix 1. Ethical Approval



T.C. YEDİTEPE ÜNİVERSİTESİ
GİRİŞİMSEL OLMAYAN KLİNİK ARAŞTIRMALAR
ETİK KURULU

Versiyon No 1.0
Sayfa 1 / 2

KARAR FORMU

2.09.2021

ETİK KURUL BİLGİLERİ		
	Etik Kurulun Adı	Yeditepe Üniversitesi Girişimsel Olmayan Klinik Araştırmalar Etik Kurulu
	Açık Adres	Yeditepe Üniversitesi Diş Hekimliği Fakültesi, Bağdat Cad. No. 238 Göztepe 34728 Kadıköy, İstanbul
	İnternet Sayfası	http://goetik.yeditepe.edu.tr/
	Telefon	0216 363 60 44
	E-posta	goetik@yeditepe.edu.tr

DEĞERLENDİRİLEN BELGELER	
	Islak imzalı başvuru dosyası, CD'si ve elektronik başvuru ☒
	Araştırma başlığı ve araştırmacıların isimleri ☒
	Başvuru dilekçesi ☒
	Araştırmanın; ☒
	• Niteliği ☒
	• Önemi ve özgün değeri ☒
	• Amaç ve hedefleri ☒
	• Yöntemi ☒
	• Yönetimi ☒
	• Yaygın etkisi ☒
	• Araştırma bütçesi (Mevcutsa) ☒
	• Süresi ve uygunluğu (Zaman cetveli) ☒
	• Kaynakları ☒
	Araştırma izin belgesi / belgeleri ☒
	Bilgilendirilmiş Gönüllü Olur Formu (yapılan araştırmaya özel olarak hazırlanmış) ☒
	Taahhütname-1 ☒ Dünya Tıp Birliği Helsinki Bildirgesinin son versiyonunun ve Sağlık Bakanlığı'nın ilgili tüm kılavuzlarının okunmasına dair taahhüt
	Taahhütname-2 ☒ Daha önce yapılmış etik kurul başvuruları mevcut olup olmadığına dair taahhüt
	Taahhütname-3 ☒ Araştırma sırasında araştırma bütçesinde yer almayan ve gönüllünün kendisine veya Sosyal Güvenlik Kurumuna ek yük getirecek hiçbir işlem uygulanmayacağına dair taahhüt
	Taahhütname-4 ☒ COVID-19 hastalarında tedavi yaklaşımları ve bilimsel araştırmalar genelgesi okunmasına dair taahhüt
	Araştırmacıların her birisine ait özgeçmiş formu ☒
	Ek belgeler (Varsa kullanılan ölçek izinleri vb.) ☒

KARAR BİLGİLERİ		
	Başvuru Numarası	202105028
	Toplantı Tarihi	21.06.2021
	Toplantı Yeri	Çevirim içi (Google Meet)
	Karar No	11

Araştırmanın Başlığı: **Covid 19 sürecinde ev kadınlarında menopoz süresinin postür ve fonksiyonel aktivite üzerine etkisi**

Araştırmacılar: **Dr. Öğr. Üyesi Çiğdem Yazıcı Mutlu, Fzt. Beyzanur Beğenen**

BAŞVURU NUMARASI: 202105028

KARAR 2.09.2021

☒ **KABUL**	☐ **RET** ☐ *KAPSAM DIŞI (GİRİŞİMSEL)* ☐ *BİLİMSEL VE/VEYA ETİK KURALLARA AYKIRI* ☐ *BİR SORUMLU ARAŞTIRMACININ (TEZ İSE TEZ DANIŞMANI), BİR TOPLANTIYA **İKİ (2)** **ADETTEN FAZLA ÇALIŞMA BAŞVURUSUNDA** BULUNMASI* ☐ *KURUM İÇİ BAŞVURULARINDA **YEDİTEPE UZANTILI E-POSTA HESABI** İLE GİRİŞ YAPILMAMIŞ OLMASI* ☐ *ŞARTLI KABULDE BELİRTİLEN REVİZYONLARIN ZAMANINDA VE/VEYA İSTENİLDİĞİ ŞEKİLDE YAPILMAMIŞ OLMASI*

T.C. Yeditepe Üniversitesi Girişimsel Olmayan Klinik Araştırmalar Etik Kurulu adına
Prof. Dr. Didem ÖZDEMİR ÖZENEN
Başkan

Araştırmanın Başlığı: **Covid 19 sürecinde ev kadınlarında menopoz süresinin postür ve fonksiyonel aktivite üzerine etkisi**

Araştırmacılar: **Dr. Öğr. Üyesi Çiğdem Yazıcı Mutlu, Fzt. Beyzanur Beğenen**

7.2. Appendix 2. Informed Voluntary Consent Form

Bilgilendirilmiş Gönüllü Olur Formu

Sayın katılımcı,

Davet edildiğiniz "Covid 19 Sürecinde Menopoz Süresinin Ev Kadınlarında Postür ve Fonksiyonel Aktiviteye Etkisi" isimli bu çalışma; Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü Fizyoterapi ve Rehabilitasyon Bölümü tarafından yürütülmektedir ve yüksek lisans öğrencisi Fzt. Beyzanur Beğenen'in uzmanlık tez çalışmasıdır. Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü Fizyoterapi ve Rehabilitasyon Anabilim Dalı'nda Dr. Çiğdem YAZICI MUTLU gözetiminde yapılacaktır.

Bu çalışmanın temel amacı, menopoz süresinin ev hanımlarının postür ve fonksiyonel aktiviteleri üzerindeki etkisini değerlendirmektir. Çalışmada ev kadınlarına; New York Postür Derecelendirme Testi ile postür, Beck Depresyon Değerlendirmesi ile depresyon durumu, Nottingham Sağlık Profili ile sağlık durumu, dinamometre ile kavrama kuvveti, alt extremite kuvveti ve fonksiyonunu 5 kere otur kalk testi, fonksiyonel aktivite değerlendirme için zamanlı kalk ve yürü testi uygulanacaktır. Demografik bilgiler alındıktan sonra katılımcılar menopoz sürelerine göre iki gruba ayrılarak fizyoterapist tarafından postür, kas gücü, depresyon ve fonksiyonel aktiviteleri değerlendirilecektir. Testler 3 defa tekrarlı olarak yapılacaktır. Değerlendirmelerden elde edilen veriler bilgisayara kaydedilecek ve sonuçlar analiz edilecektir. Menopoza girmiş 42 kadını bu çalışmaya dahil etmeyi hedefliyoruz.

Bir araştırma projesine davetlisiniz. Karar vermeden önce bu araştırmanın neden ve nasıl yapılacağını anlamanız çok önemlidir. Lütfen biraz zaman ayırın ve aşağıdaki bilgileri dikkatlice okuyun, dilerseniz başkalarıyla tartışın. Net olmayan bir bölüm varsa veya daha detaylı bilgiye ihtiyaç duyuyorsanız bizden bilgi alabilirsiniz. Araştırmamıza davetlisiniz çünkü dahil edilme kriterlerini karşıladığınızı düşünüyoruz. Katılımın isteğe bağlı olduğunu ve katılmayı reddetmenin herhangi bir cezaya veya herhangi bir menfaat kaybına yol açmayacağını belirtmek isteriz. Aynı şekilde istediğiniz zaman araştırmadan çekilebilirsiniz.

Araştırmamızda katılımcılara uygulanan değerlendirmelerin bilinen herhangi bir zararı bulunmamaktadır. Değerlendirme sürecinde veya rehabilitasyon sürecinde beklenmedik bir hasar olması durumunda, size hemen bilgilendirme yapılacaktır. Katılımcıların herhangi bir zarar görmesi durumunda, gerekli başvurular herhangi bir yardım kaynağı araştırmacılar tarafından karşılanacaktır.

Bunun için ne sizden ne de sosyal güvenlik sigortanızdan herhangi bir ücret alınmayacaktır. Araştırmaya katılmak size hemen yardımcı olmamakla birlikte, araştırma sonuçlarımızın gelecekte organizasyon, toplum veya bilim için faydaları olacağı umulmaktadır. Araştırmanın amaçları için veya bağlı olduğunuz sosyal güvenlik kurumu için sizden herhangi bir ücret alınmayacaktır.

Danışman

Dr Öğr Üyesi Çiğdem YAZICI MUTLU
Yeditepe Üniversitesi
Sağlık Bilimleri Fakültesi
Fizyoterapi ve Rehabilitasyon Bölümü

Araştırmacı

Fzt Beyzanur Beğenen
Yeditepe Üniversitesi
Sağlık Bilimleri Enstitüsü
Fizyoterapi ve Rehabilitasyon Bölümü

Onay Formu

Bilgilendirme formundaki tüm açıklamaları okudum. Bana, yukarıda konusu ve amacı belirtilen çalışma ile ilgili yazılı ve sözlü açıklama araştırmacı tarafından yapıldı. Araştırmaya katılmaya gönüllü olduğumu, istediğim zaman gerekçeli veya gerekçesiz olarak araştırmadan ayrılabileceğimi biliyorum. Söz konusu çalışmaya hiçbir baskı ve zorlama olmaksızın kendi rızamla katılmayı ve sonuçlarımın kullanılmasını kısıtlamamayı, yayın, rapor ve benzeri bilimsel dokümanlarda kullanılmasını kabul ediyorum.

Gönüllünün
Adı Soyadı:
İmza:
Tlf:

Araştırmacının
Adı Soyadı:
İmza:
Tlf:

Tarih:

7.3.Appendix 3. Demographic Form

Genel Bilgi Formu

Ad ve soyad:

Doğum tarihi:

Yaş:

Cinsiyet:

Boy:

Kilo:

BMI:

Dominant Taraf: Sağ ( ) Sol ( )

Medeni hal:

Çalışma durumu :

Çocuğu var mı?

Evde kaç kişi yaşıyor?

Evde oda sayısı?

Eğitim durumu:

Sigara kullanıyor musunuz? (Haftalık/paket):

Alkol kullanıyor musunuz? (Haftalık/Kadeh):

1. **Herhangi bir doktor tarafından konulmuş bir teşhisiniz var mı?**
   ( ) Evet –Eğer evetse, Teşhisiniz nedir? _____
   ( ) Hayır
2. **İlaç kullanıyor musunuz?**
   ( ) Evet –Eğer evetse, adı nedir ilacın? _____
   ( ) Hayır

3. **Ameliyat oldunuz mu?**

( ) Evet

( ) Hayır

Eğer evetse, ameliyatınız neydi? _____

Ne zaman ameliyat oldunuz? _____

4. **Yardımcı bir cihaz kullanıyor musunuz?**

( ) Evet

( ) Hayır

5. **Kronik bir rahatsızlığınız var mı?**

( ) Hayır

( ) Vestibular (Dengeyle alakalı) hastalığı

( ) Kardiyovasküler hastalıkları (Kalp rizim bozukluğu,tansiyon, anemi, vb.)

( ) Solunum hastalıkları (Astım, alerji vb.)

( ) Kulak hastalıkları (Duyma problemleri vb.)

( ) Sinir sistemi Hatalıkları (Vertigo, epilepsi, nöropati, his kaybı vb.)

( ) Enfeksiyon Hastalıkları (Bademcik iltihabı, otitis vb.)

( ) Hormonal Hastalıklar (Diyabet, guatır , insulin direci vb.)

( ) Kas ve iskelet sistemi hastalıkları (Kas,eklem, romatizma hastalıkları, vb.)

( ) Sindirim sistemi, metabolic hastalıklar (Gastrit, ülser, ülser, bağırsak hastalıkları vb.)

( ) Görme kusuru

6. **Egzersiz yapıyor musunuz? Yapıyorsanız, ne sıklıkla?**

( ) Yapmıyorum

( ) 1-2 kere haftada

( ) 3-4 kere haftada

( ) Hergün

( ) Ayda 3 günden daha az

7. **Hangi sporu tercih ediyorsunuz ?**

   ( ) Yürüyüş ( ) Basketbol ( ) Voleybol ( ) Tenis ( ) Koşu ( ) Yüzme

   Other _____

8. **Eğer egzersiz yapıyorsanız, ne kadar süre ayırıyorsunuz?**

   ( ) 20 dakika veya az

   ( ) 21-30 dakika

   ( ) 31-50 dakika

   ( ) 50 dakikadan daha fazla

9. **Toplam ev işlerine ne kadar süre ayırıyorsunuz?**

   ( ) 1 saatten az

   ( )1-2 saat arası

   ( )3-4 saat arası

   ( ) 4 saatten daha fazla

10. **En çok zaman ayırdığınız ev işi hangisi? _____**

11. **Yukarda belirttiğiniz ev işini ne kadar süre ayırıyorsunuz?**

    ( ) 1 saatten az

    ( )1-2 saat

    ( )3-4 saat

    ( )4 saatten fazla

12. **Kendinize gün içinde ne kadar süre ayırıyorsunuz?**

    ( ) 30 dakikadan az

    ( ) 30 dakika ve 1 saat arasında

    ( ) 1-2 saat

    ( ) 2 saatten daha fazla

13. **Televizyon izlemeye ne kadar süre ayırıyorsunuz?**

    ( ) 1 saatten az

    ( )1-2 saat

    ( )3-4 saat

    ( )4 saatten fazla

14. Telefonda ne kadar vakit geçiriyorsunuz?

( ) 1 saatten az

( )1-2 saat

( )3-4 saat

( )4 saatten fazla

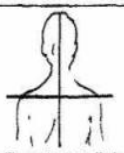
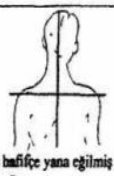
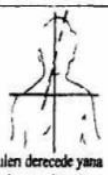
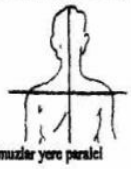
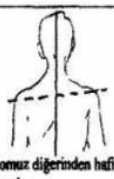
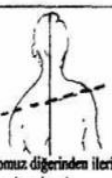
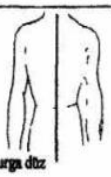
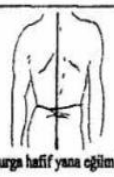
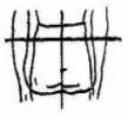
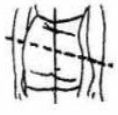
7.4.Appendix 4.New York Posture Rating

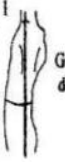
NEW YORK POSTÜR DEĞERLENDİRME TESTİ

Adı Soyadı: TARİH:

Yaş:

Cins:

				1.	2.	3.
A	5  Baş dik gravite hattı direk merkezden geçiyor	3  Baş hafifçe yana eğilmiş veya dönmüş	1  Baş ileri derecede yana eğilmiş veya dönmüş			
B	5  Omuzlar yere paralel	3  Bir omuz diğerinden hafifçe yukarıda	1  Bir omuz diğerinden ileri derecede yukarıda			
C	5  Omurga düz	3  Omurga hafif yana eğilmiş	1  Omurga ileri derecede eğilmiş			
D	5  Kalçalar yere paralel	3  Bir kalça diğerinden hafifçe yukarıda	1  Bir kalça ileri derecede diğerinden yukarıda			
E	5  Ayaklar düz	3  Ayaklar dışarıya dönük	1  Ayaklar pronasyonda			
F	5  Arkalar yüksek	3  Arklar hafif düşük	1  Arklar düşük düz taban			
	5 normal	3 orta seviyede	1 ileri seviyede			

	5	3	1	1.	2	3
G	 Boyun dik çene içerde, baş omuz üstünde dengede	 Boyun hafif önde çene hafif dışarıda	 Boyun ileri derecede önde çene ileri derecede dışarıda			
H	 Göğüs yukarda sternum vücut önünde ilerde	 Göğüs hafif derecede çökmüş	 Göğüs ileri derecede çökmüş (düz)			
I	 Omuzlar merkezde	 Omuzlar hafif ilerde	 Omuzlar protrakte			
J	 Üst sırt normal	 Üst sırt hafif yuvarlak	 Üst sırt ileri derecede yuvarlak			
K	 Gövde dik	 Gövde hafif geriye açılı	 Gövde geriye ileri derece açılanmış			
L	 Karın düz	 Karın protrakte	 Karın protrakte ve sarkmış			
M	 Alt sırt normal	 Alt sırt hafif çukur	 Alt sırt ileri derece çukur			
	5 normal	3 orta seviyede	1 ileri seviyede			

1.Eğer sol kolondakı açıklamaya uygun ise 5 puan TOPLAM
2.Eğer orta kolondakı açıklamaya uygun ise 3 puan SKOR
3.Eğer sağ kolondaki açıklamaya uygun ise 1 puan ekleyin.

7.5.Appendix 5.Beck's Depression Inventory

BDE

Aşağıda, kişilerin ruh durumlarını ifade ederken kullandıkları bazı cümleler verilmiştir. Her madde bir çeşit ruh durumunu anlatmaktadır. Her maddede o ruh durumunun derecesini belirleyen 4 seçenek vardır. Lütfen bu seçenekleri dikkatle okuyunuz. Son bir hafta içindeki (şu an dahil) kendi ruh durumunuzu göz önünde bulundurarak, size en uygun olan ifadeyi bulunuz. Daha sonra, o maddenin yanındaki harfin üzerine (X) işareti koyunuz.

1)	a. Kendimi üzgün hissetmiyorum b. Kendimi üzgün hissediyorum c. Her zaman için üzgünüm ve kendimi bu duygudan kurtaramıyorum d. Öylesine üzgün ve mutsuzum ki dayanamıyorum
2)	a. Gelecekten umutsuz değilim b. Gelecek konusunda umutsuzum c. Gelecekten beklediğim hiç bir şey yok d. Benim için bir gelecek olmadığı gibi bu durum değişmeyecek
3)	a. Kendimi başarısız görmüyorum b. Herkesten daha fazla başarısızlıklarım oldu sayılır c. Geriye dönüp baktığımda, pek çok başarısızlıklarımın olduğunu görüyorum d. Kendimi bir insan olarak tümüyle başarısız görüyorum
4)	a. Her şeyden eskisi kadar doyum (zevk) alabiliyorum b. Her şeyden eskisi kadar doyum alamıyorum c. Artık hiçbir şeyden gerçek bir doyum alamıyorum d. Bana doyum veren hiçbir şey yok. Her şey çok sıkıcı
5)	a. Kendimi suçlu hissetmiyorum b. Arada bir kendimi suçlu hissettiğim oluyor c. Kendimi çoğunlukla suçlu hissediyorum d. Kendimi her an için suçlu hissediyorum
6)	a. Cezalandırılıyormuşum gibi duygular içinde değilim b. Sanki bazı şeyler için cezalandırılabilirmişim gibi duygular içindeyim c. Cezalandırılacakmışım gibi duygular yaşıyorum d. Bazı şeyler için cezalandırılıyorum
7)	a. Kendimi hayal kırıklığına uğratmadım b. Kendimi hayal kırıklığına uğrattım c. Kendimden hiç hoşlanmıyorum d. Kendimden nefret ediyorum
8)	a. Kendimi diğer insanlardan daha kötü durumda görmüyorum b. Kendimi zayıflıklarım ve hatalarım için eleştiriyorum c. Kendimi hatalarım için her zaman suçluyorum d. Her kötü olayda kendimi suçluyorum

9)	a. Kendimi öldürmek gibi düşüncelerim yok b. Bazen kendimi öldürmeyi düşünüyorum ama böyle bir şey yapamam c. Kendimi öldürebilmeyi çok isterdim d. Eğer bir fırsatını bulursam kendimi öldürürüm
10)	a. Herkesten daha fazla ağladığımı sanmıyorum b. Eskisine göre şimdilerde daha çok ağlıyorum c. Şimdilerde her an ağlıyorum d. Eskiden ağlayabilirdim. Şimdilerde istesem de ağlayamıyorum
11)	a. Eskisine göre daha sinirli veya tedirgin sayılmam b. Her zamankinden biraz daha fazla tedirginim c. Çoğu zaman sinirli ve tedirginim d. Şimdilerde her an için tedirgin ve sinirliyim
12)	a. Diğer insanlara karşı ilgimi kaybetmedim b. Eskisine göre insanlarla daha az ilgiliyim c. Diğer insanlara karşı ilgimin çoğunu kaybettim d. Diğer insanlara karşı hiç ilgim kalmadı
13)	a. Eskisi gibi rahat ve kolay kararlar verebiliyorum b. Eskisine kıyasla şimdilerde karar vermeyi daha çok erteliyorum c. Eskisine göre karar vermekte oldukça güçlük çekiyorum d. Artık hiç karar veremiyorum
14)	a. Eskisinden daha kötü bir dış görünüşüm olduğunu sanmıyorum b. Sanki yaşlanmış ve çekiciliğimi kaybetmişim gibi düşünüyor ve üzülüyorum c. Dış görünüşümde artık değiştirilmesi mümkün olmayan ve beni çirkinleştiren değişiklikler olduğunu hissediyorum d. Çok çirkin olduğumu düşünüyorum
15)	a. Eskisi kadar iyi çalışabiliyorum b. Bir işe başlayabilmek için eskisine göre daha çok çaba harcıyorum c. Ne olursa olsun, yapabilmek için kendimi çok zorluyorum d. Artık hiç çalışamıyorum
16)	a. Eskisi kadar kolay ve rahat uyuyabiliyorum b. Şimdilerde eskisi kadar kolay ve rahat uyuyamıyorum c. Eskisine göre bir veya iki saat erken uyanıyor, tekrar uyumakta güçlük çekiyorum d. Eskisine göre çok erken uyanıyor ve tekrar uyuyamıyorum
17)	a. Eskisine göre daha çabuk yorulduğumu sanmıyorum b. Eskisinden daha çabuk ve kolay yoruluyorum c. Şimdilerde neredeyse her şeyden, kolayca ve çabuk yoruluyorum d. Artık hiçbir şey yapamayacak kadar yorgunum
18)	a. İştahım eskisinden pek farklı değil b. İştahım eskisi kadar iyi değil c. Şimdilerde iştahım epey kötü d. Artık hiç iştahım yok

19)	a. Son zamanlarda pek fazla kilo kaybettiğimi/aldığımı sanmıyorum b. Son zamanlarda istemediğim halde iki buçuk kilodan fazla kaybettim/aldım c. Son zamanlarda beş kilodan fazla kaybettim/aldım d. Son zamanlarda yedi buçuk kilodan fazla kaybettim/aldım
20)	a. Sağlığım beni pek endişelendirmiyor b. Son zamanlarda ağrı, sızı, mide bozukluğu, kabızlık gibi sıkıntılarım var c. Ağrı sızı gibi bu sıkıntılarım beni çok endişelendiriyor d. Bu tür sıkıntılar beni öylesine endişelendiriyor ki başka bir şey düşünemiyorum
21)	a. Son zamanlarda cinsel yaşantımda dikkatimi çeken bir şey yok b. Eskisine göre cinsel konularla daha az ilgileniyorum c. Şimdilerde cinsellikle pek ilgili değilim d. Artık cinsellikle hiç bir ilgim kalmadı

7.6.Appendix 6. Nottingham Health Profile

Nottingham Sağlık Profili
Nottingham Health Profile (NHP)

Hastanın Adı Soyadı: ..... Tarih: ../../....

Aşağıda insanların günlük hayatta karşılaşabilecekleri bazı problemler sıralanmıştır. Listeye bakınız ve şu anda sahip olduğunuz problem için **Evet**, olmadığınız problem için **Hayır** kutucuğunu işaretleyiniz. Lütfen her soruyu cevaplayınız. Emin değilseniz, şu anda en doğru olduğunu düşündüğünüz cevabı işaretleyiniz.

	Ağrı	Evet	Hayır
1	Merdivenleri inerken ve çıkarken ağrım oluyor.	❑05.83	❑0
2	Ayakta durduğum zaman ağrım oluyor.	❑08.96	❑0
3	Pozisyonumu değiştirirken ağrım oluyor.	❑09.99	❑0
4	Oturduğum zaman ağrım oluyor.	❑10.49	❑0
5	Yürüdüğüm zaman ağrım oluyor.	❑11.22	❑0
6	Geceleri ağrım var.	❑12.91	❑0
7	Dayanılmaz ağrılarım var.	❑19.74	❑0
8	Sürekli ağrılar içindeyim	❑20.86	❑0
	Alt Bölüm Toplam Puanı (0-100)	------	

	Duygusal Reaksiyonlar	Evet	Hayır
1	Olaylar beni zorluyor	❑10.47	❑0
2	Beni neyin neşelendirdiğini bile unuttum	❑09.31	❑0
3	Kendimi uçurumun kenarında hissediyorum	❑07.22	❑0
4	Günler zor geçiyor	❑07.08	❑0
5	Bugünlerde sık sık hiddetleniyorum	❑09.76	❑0
6	Kendimi kontrol edemeyeceğimi hissediyorum	❑13.99	❑0
7	Endişelerim gece uyumama engel oluyor	❑13.95	❑0
8	Hayatın çekilmez olduğunu düşünüyorum	❑16.21	❑0
9	Uyanınca kendimi depresyonda hissediyorum	❑12.01	❑0
	Alt Bölüm Toplam Puanı (0-100)	------	

	Uyku	Evet	Hayır
1	Uyku ilacı alıyorum	❑22.37	❑0
2	Sabah erken saatte istemeden uyanıyorum	❑12.57	❑0
3	Gece uykum kaçıyor	❑27.26	❑0
4	Uyumakta güçlük çekiyorum	❑16.10	❑0
5	Gece uykum çok kötü	❑21.70	❑0
	Alt Bölüm Toplam Puanı (0-100)	------	

S. M. Hunt, J. McEwen (1985) J R Coll Gen Pract. 1985 Apr; 35(273): 185–188

1. Bölüm Toplam Profil Puanı (0-600): .....

2. Bölüm Toplam Profil Puanı (0-7): .....

	Sosyal İzolasyon	Evet	Hayır
1	Kendimi yalnız hissediyorum	❑22.01	❑0
2	İnsanlarla ilişki kurmakta güçlük çekiyorum	❑19.36	❑0
3	Kendimi hiç kimseye yakın hissetmiyorum	❑20.13	❑0
4	İnsanlara yük olduğumu düşünüyorum	❑22.53	❑0
5	İnsanlarla geçinmek güç geliyor	❑15.97	❑0
	Alt Bölüm Toplam Puanı (0-100)	------	

	Fiziksel Aktivite	Evet	Hayır
1	Yalnız ev içinde yürüyebiliyorum	❑11.54	❑0
2	Eğilmek benim için çok zor	❑10.57	❑0
3	Hiç yürüyemiyorum	❑21.30	❑0
4	Merdiven inip çıkmakta zorlanıyorum	❑10.79	❑0
5	Bir yere uzanmakta güçlük çekiyorum	❑09.30	❑0
6	Giyinirken zorlanıyorum.	❑12.61	❑0
7	Uzun süre ayakta duramıyorum	❑11.20	❑0
8	Sokakta yürümek için yardım gerekiyor	❑12.69	❑0
	Alt Bölüm Toplam Puanı (0-100)	------	

	Enerji	Evet	Hayır
1	Enerjim Kısa sürede tükeniyor.	❑24.00	❑0
2	Her şey çaba harcamamı gerektiriyor.	❑36.80	❑0
3	Her zaman yorgunum	❑39.20	❑0
	Alt Bölüm Toplam Puanı (0-100)	------	

Bölüm 2	Toplam Skor (0-7)	------	
	Sağlık durumunuz nedeniyle aşağıdaki durumlarda problem yaşıyor musunuz?	Evet	Hayır
1	Çalıştığınız işte	❑1	❑
2	Yemek, temizlik, tamir gibi işlerinde	❑1	❑
3	Dışarı çıkmak, arkadaş ziyareti, sinema gibi sosyal faaliyetlerde	❑1	❑
4	Evdeki diğer insanlarla ilişkilerde	❑1	❑
5	Cinsel hayatınızda	❑1	❑
6	Hobi gibi aktiviteler yapmakta	❑1	❑
7	Tatil zamanlarında	❑1	❑

7.7.Appendix 7. Curriculum Vitae

Kişisel Bilgiler

Adı	Beyzanur	**Soyadı**	Beğenen

Öğrenim Durumu

Derece	Alan	Mezun Olduğu Kurumun Adı	Mezuniyet Yılı
Yüksek Lisans	Fizyoterapi ve Rehabilitasyon	**Yeditepe Üniversitesi**	2022
Lisans	Fizyoterapi ve Rehabilitasyon	**Acıbadem Üniversitesi**	2017
Lise	-	**Özel Asiye Coşkun Fen Lisesi**	2013

Bildiği Yabancı Dilleri	Yabancı Dil Sınav Notu
İngilizce	66,25
Almanca	

İş Deneyimi (Sondan geçmişe doğru sıralayın)

Görevi	Kurum	Süre (Yıl - Yıl)
Fizyoterapist	Özel Bursa Özel Genç Kardelen Özel Eğitim ve Rehabilitasyon	2017-2017

Bilgisayar Bilgisi

Program	Kullanma becerisi
Word	Orta
Powerpoint	Orta

Bilimsel Çalışmaları
SCI, SSCI, AHCI indekslerine giren dergilerde yayınlanan makaleler

Diğer dergilerde yayınlanan makaleler

Uluslararası bilimsel toplantılarda sunulan ve bildiri kitabında (*Proceedings*) basılan bildiriler

Hakemli konferans/sempozyumların bildiri kitaplarında yer alan yayınlar

Diğer (Görev Aldığı Projeler/Sertifikaları/Ödülleri)
