EFFECTIVENESS OF USING PROGRESSIVE MUSCLE RELAXATION TECHNIQUE IN PSYCHOLOGICAL DISTRESS DURING MENOPAUSE

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CERTIFICATE OF APPROVAL

It is certified that the Research Thesis titled "Effectiveness of using progressive muscle relaxation technique in psychological distress during menopause" carried out by Noorain Alam, Reg. No. BSP201022, under the supervision of Ms. Uzma Mushtaq, Capital University of Science & Technology, Islamabad, is fully adequate, in scope and in quality, as a Research Thesis for the degree of BS Psychology.

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It is declared that this is an original piece of my own work, except where otherwise acknowledged in text and references. This work has not been submitted in any form for another degree or diploma at any university or other institution for tertiary education and shall not be submitted by me in future for obtaining any degree from this or any other University or Institution.

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Abstract

The occurrence of menopause is a natural and common phenomenon affecting women all over the world, but unfortunately in Pakistan it is still a sensitive topic. Menopause is a physically and psychologically distressing time for women, but the problem is not properly addressed, making it challenging for Pakistani women to cope with it. This research determines the degree of severity of psychological distress during menopause, along with providing an intervention to alleviate the symptoms. Thirty-five women from Rawalpindi, Pakistan, (N=35) is the sample size for an intervention-based quasi-experimental design. This experimental based study design utilizes a quantitative approach. The sample is of 45+ year's age range. Purposive sampling is the method adopted. Instruments used are Menopause rating scale (MRS) and the Kessler's psychological distress scale (K10). Participants are divided into group of 2 containing high and low level of psychological distress symptom rating on the K10 scale. The intervention applied is progressive muscle relaxation technique (PMRT) along with a placebo intervention that is autogenic training. Time period for the application of intervention lasts 20-25 minutes each participant. Pre testing was done before intervention and post testing after 25-30 minutes of intervention. The results of pre- and post-testing are analyzed by SPSS. In addition to determining the intensity of psychological distress associated with menopause, this study also highlights the value of adopting the progressive muscle relaxation technique PMR as a remedy to relieve the symptoms. This research gives insights about a taboo topic in Pakistan relating to women's biological health. It will also be advantageous for the women who are already dealing with this issue or those who will deal with it in the future by providing them with a coping strategy.

Keywords: psychological distress, menopause and coping strategy.

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Chapter 01

Introduction

Menopause, which marks the end of a woman's reproductive years, is a normal and inevitable stage of life. A complex mix of biological, physical, and psychological changes characterizes this transition, which is indicative of the complicated hormonal transformations that occur in the female body. Menopause is the biological term for the end of the menstrual cycle, which normally happens about age 50, though this might vary. Women's reproductive years conclude with menopause, from ages of 45 and 55 years, as a result of the decrease of ovarian follicular activity (World Health Organization: WHO, 2022). The menstrual cycle ends when the ovaries progressively stop producing progesterone and estrogen. A series of physiological changes resulting from this drop in hormone levels have a broad impact on multiple organ systems. After 12 months of menstrual irregularities brought on by the permanent cessation of ovarian function, menopause is diagnosed (Greendale et al., 1999). Changes in reproductive hormones characterize the defined period known as perimenopause, which begins with irregular menstrual cycles and ends with the last menstrual period (Dalal & Agarwal, 2015).

Menopause

Menopause is a significant life transition associated with physiological changes, hormonal fluctuations, and psychosocial challenges. These factors can be perceived as stressors that contribute to psychological distress.

The drop in estrogen levels has significant biological consequences for bone health. By preventing osteoclasts—the cells that cause bone resorption—from activating, estrogen plays a critical function in preserving bone density. Osteoporosis and fractures are more likely during menopause as a

result of increased bone turnover brought on by declining estrogen. Because of this increased vulnerability to bone-related problems, it is critical to take preventive steps to lessen these biological effects, such as consuming enough calcium, engaging in regular weight-bearing activity, and, in certain situations, hormone replacement therapy (HRT) (Eastell et al., 2016).Menopause is frequently accompanied with hot flashes, precipitation at night, problems with sleeping, fluctuation of mood, and dryness of genital area, in addition to a decline in circulating hormone levels (Shifren & Gass, 2014). Menopause causes changes in cardiovascular health in addition to skeletal dysfunction. It is well recognized that estrogen influences vascular function and lipid metabolism, among other cardioprotective factors. An unhealthy lipid profile and a higher risk of cardiovascular illnesses may be caused by the decrease in estrogen levels that occurs after menopause (CEDAW, 2019). Therefore, it is crucial to address cardiovascular health during this stage of life, highlighting the necessity of leading a heart-healthy lifestyle that includes regular exercise, eating a balanced diet, and keeping an eye on your major cardiovascular risk factors.

There exist many types of menopauses (Edwards et al., 2019). Menopause happens sooner than the usual for a small but considerable percentage of women. Premature means occurring before the age of 40, while early means occurring between the ages of 40 and 45 (Shadyab et al., 2017). Another type is induced menopause also known as surgical menopause, is a medical technique that involves surgically removing a woman's ovaries, resulting in a sudden stop of ovarian hormone production and, as a result, starts the phase of menopause (Stuenkel et al., 2015).

The perimenopause lasts a year following the last menstrual period and is characterized by irregular menstrual cycles and deteriorating ovarian function. As hormone levels begin to vary and gradually diminish, cycle lengths are shifted (Prior, 2006). Each woman's experience with perimenopause is very different (Sulak, P. J. 1996). It might last as little as a few months or as long as a

decade, but the usual duration is three to four years (Treloar, 1981). When a woman has not experienced period for more than a year following menopause, it is post-menopause (Felson et al., 1993). Postmenopausal symptoms have the greatest impact on quality of life and induce sleep problems and anxiety, implying that adequate management of anxiety and exhaustion is necessary for women transitioning to post menopause (Greenblum et al., 2013).

Menopause causes a wide range of physical changes in addition to the biological ones that can affect a woman's day-to-day activities. Vasomotor symptoms are a prominent physical manifestation that are usually referred to as night sweats and hot flashes. These sudden, fleeting bursts of heat can be accompanied by sweating, palpitations, and anxiety, which can impair quality of life overall and interfere with sleep (Freeman et al., 2015). Although the precise mechanisms driving vasomotor symptoms are still being investigated, hormone fluctuations—particularly variations in estrogen levels—are thought to be key players. Women have a variety of alternatives for managing these physically uncomfortable symptoms, ranging from medication therapies to lifestyle modifications (Avis et al., 2015).

Menopause brings with it an equally complex psychological terrain, characterized by shifts in mood, cognitive disbalancing, and overall state of mind. An increased susceptibility to mood disorders like sadness and anxiety has been connected to variations in hormones, namely the decrease in estrogen (Soares et al., 2011). A comprehensive approach to menopausal care is necessary due to the complex interaction between hormonal changes and mental health, which recognizes the interdependence of the biological and psychological domains. According to Greendale et al. (2018), cognitive alterations, sometimes known as "menopausal fog," can also cause issues with memory, focus, and cognitive processing speed. Even though they are usually mild, these cognitive changes might affect a woman's everyday functioning and lead to feelings of frustration.

According to Lock and Kaufert (2001), the mental distress of experiencing severe symptoms and feeling out of control throughout menopause is exhausting. Menopause is an "invariant biological transition" that brings about deterioration and loss (Nosek et al., 2012). The importance of psychological characteristics, style of living, perception about body, social interactions with people around, role, and societal values accompanied with cultural norms in predicting menopausal depression and anxiety cannot be underestimated (Deeks, A. A. 2003). There is significant convincing proof that psychological symptoms occur more frequently in association to deteriorating ovarian function, but the degree of these symptoms may be influenced by societal factors (Dennerstein & Burrows, 1978).

Psychological distress

Psychological distress is a condition of emotional turmoil that includes depressive and anxious symptoms (Berlin, 1991). A complicated yet prevalent feeling, psychological distress includes a variety of emotional and mental difficulties that people may endure in different situations. Research continually reveals the complex interactions between factors that lead to psychological discomfort, highlighting its range of manifestations and emphasizing the necessity of specific therapies. The effect of constant stress on mental health is one important factor that contributes to psychological suffering. Psychological distress can be effectively triggered by long-term stresses, including financial hardships, health issues, work-related demands, and interpersonal conflicts (Cohen et al., 2016). An overabundance of these stressors can cause the stress response system to become dysregulated, which can prolong periods of elevated physiological arousal and emotional distress. Somatic symptoms in psychological distress including fatigue, migraines, and insomnia are also prevalent (Shaver & Paulsen, 1993). Research conducted by Simon et al., (1996) on the somatic symptoms of distress suggested that somatic discomfort was consistently and significantly correlated with psychological distress.

Furthermore, research highlighting the influence of social support networks on mental health highlights the part that social factors play in psychological suffering. There is a constant correlation between psychological distress susceptibility and a lack of social support (Lakey & Cronin, 2008). According to a qualitative study conducted in Karachi, Pakistan, some degree of psychological distress during menopause was partially due to a lack of support from intimate partners, and these women emphasized the importance to educate their husbands about menopausal changes (Asad et al., 2021). Anxiety and depression are two of the most common mental health illnesses that cause psychological distress. Excessive fear and worry are hallmarks of anxiety disorders, which frequently interact with depressive symptoms to create a complicated web of psychological issues (Kessler et al., 2010). These diseases are common, which emphasizes the need for focused therapeutic strategies that address psychological distress's emotional and cognitive components.

Evidence-based therapies, such as mindfulness-based practices, have demonstrated effectiveness in reducing anxiety and depressive symptoms and giving people useful skills for handling psychological distress (Hofmann et al., 2012; Kabat-Zinn, 2003). Moreover, one cannot undervalue the influence that traumatic events have on psychological discomfort. According to Koenen et al. (2017), exposure to stressful situations can result in post-traumatic stress disorder (PTSD), which has a significant and long-lasting impact on mental health.

Progressive muscle relaxation technique (PMRT)

Progressive Muscle Relaxation (PMR) is a widely recognized, scientifically supported relaxation method that has been shown to be effective in reducing psychological discomfort in a range of demographics. The foundation of PMR, which was created by Edmund Jacobson in the early 1900s, is

the idea that physical relaxation has a beneficial impact on mental health. Progressive Muscle Relaxation is a well-established relaxation technique that aims to reduce muscle tension and promote overall relaxation. In the context of menopause, PMR may serve as a coping strategy to mitigate the impact of stressors on psychological well-being. Through systematic tensing and relaxing of various muscle groups, the technique heightens awareness of bodily sensations and cultivates a profound state of calm. A large body of research has been done on the usefulness and efficacy of PMR in treating psychological distress. Several studies have shown how well it works to reduce stress, control anxiety, and improve mental health in general.

The connection between muscle tension and wide range of physical and psychological issues were seen in research by Jacobson (1934), as a result of his findings PMR was introduced proposing that psychological distresses can be alleviated through muscle relaxation techniques (Bracke, 2010). Jacobson (1934), first described progressive muscle relaxation method (PMR) as the tensing and relaxing of 16 muscle groups. The ability of PMR to regulate the physiological stress response is one of its primary benefits. Studies have repeatedly shown that PMR can lower physiological arousal, which includes lowering blood pressure, heart rate, and cortisol levels (Jallo et al., 2015). PMR induces a state of physical relaxation that activates the parasympathetic nervous system, thereby reversing the stress-induced "fight or flight" reaction. This physiological change has ramifications for people dealing with chronic stress or elevated anxiety and adds to a general feeling of calm. In a study on the effectiveness of employing the progressive muscle relaxation technique for pain treatment in gynecology and obstetrics, the patients who adopted PMRT were able to evaluate the extent of their decreased pain levels (De Paula et al., 2002).

Empirical research backs the efficacy of PMR for extreme levels of mental stress reactions and mind-body strategies such lowering tension migraines, insomnia, sleep related problems and chronic

pain. (McCallie et al., 2006). In addition, PMR's adaptability makes it a useful tool for handling a range of psychological distress symptoms. Manzoni et al. (2008) conducted a meta-analysis to investigate the efficacy of PMR in lowering anxiety levels in various groups. The results showed a significant decrease in anxiety levels. The study included a variety of samples, such as people with test anxiety, cancer patients, and people with generalized anxiety disorder. The favorable outcomes that are consistently observed in a variety of circumstances highlight how flexible and widely applicable PMR is as a psychological distress solution.

PMR also targets the cognitive aspect of psychological distress. By using the approach, people can cultivate mindfulness and a present-focused attitude by being more aware of the mind-body link. According to Khaylis et al. (2015), those who are experiencing intrusive thoughts, rumination, or cognitive distortions linked to psychological discomfort may find that this increased awareness is very helpful. PMR offers a disciplined technique to refocus attention away from upsetting ideas and encourage a state of mind that is favorable to calmness and clarity. In a cross-sectional study, Williams et al. (2005) found a negative correlation between psychological distress and social support, suggesting that people with strong social networks typically feel less distressed. This concept is expanded to include the menopausal population in the current study, which highlights the need Understanding how social support affects psychological discomfort has a significant impact on intervention tactics. Although PMR provides a concrete and customized strategy for women who are in distress, recognizing the value of social support promotes a more expansive viewpoint. Including interventions that build and maintain social ties may be a good addition to personal relaxation methods, giving menopausal women a complete network of social support as a buffer during this transitional period.

The underlying physiological mechanisms of PMR are responsible for its effectiveness in alleviating psychological discomfort. According to Jacobson's 1938 theory, PMR causes a chain reaction

of bodily and mental relaxation by methodically tensing and then relaxing various muscle groups. The Mind-Body Connection concept (Kiecolt-Glaser et al., 2018) suggests that this mechanism could be responsible for the feeling of relaxation.

Moreover, PMR has shown promise in treating symptoms associated with particular psychological disorders, such insomnia. In a 2016 study, Wang and Yeung examined how PMR affected the quality of sleep for those who suffered from insomnia. They found that PMR significantly increased the amount of time and quality of sleep. According to the research, PMR can be used as a non-pharmacological sleep aid to alleviate sleep-related problems and psychological suffering.

Autogenic training

Autogenic training is a relaxing technique created by German psychiatrist Johannes Heinrich Schultz in the 1932 which consists of concentrating on particular physiological feelings of warmth and calmness along with visualizations in order to produce effects of comfort **(**J. H. Schultz, 1932**)**. The Autogenic Relaxation Technique is a self-regulation techniques goal is to induce deep relaxation through particular self-generated sensations. In order to induce a sensation of calm and tranquility, this approach uses a series of verbal cues and mental picture. The theory behind autogenic training, or AT as it is commonly known, is that people may modify their autonomic nervous system, which will promote relaxation and lessen the negative physiological and psychological impacts of stress.

The repetition of particular autogenic phrases or formulae that direct people to concentrate on feelings like warmth, weight, and a regular heartbeat is a crucial component of acceptance therapy (AT). Jain et al. (2015) conducted a meta-analysis to look at the effects on anxiety levels of a variety of mind-body therapies, including Autogenic Training. The results of the study showed that those who practiced AT had significantly lower anxiety levels, suggesting that AT may be used as an intervention for anxiety

disorders. AT is a self-regulatory technique that involves internalizing relaxation cues. This coincides with the ideas of mindfulness and may be one of the reasons it works so well for managing anxiety.

Autogenic Training's versatility and accessibility add to its appeal as a self-help method and therapeutic intervention. Self-generated sensations and mental images are the main foci of AT, which gives people an easily integrated instrument for everyday life. Furthermore, the technique's non-invasiveness and absence of adverse effects make it appropriate for a wide spectrum of people looking to improve their mental health.

In a study by Albeniz et al, (1990) 120 participants were randomly allocated to one of three groups: Autogenic Training, Placebo, or Control. The Autogenic Training group received 20 Autogenic Training sessions and a Placebo intervention consisting of relaxation instructions without any specific approach. The control group received no intervention. The researchers employed a variety of psychological well-being indicators, including anxiety and despair. The study's findings revealed no significant differences in psychological well-being between the Autogenic Training group and any of the other groups. This implies that Autogenic Training is less effective than other relaxing treatments or a placebo.

Literature review

The role of hormones in regulating biological and psychological condition is significant. Hormones, such as estrogens, have a significance for not only development however also the development of sexuality and the process of reproduction, as well as emotional wellness. Variations in estrogen levels are extremely dangerous in few if not all women, for the appearance of psychiatric problems (Brace & McCauley, 1997). The earliest and most obvious indicator of menopause is a

reduction in estrogen levels. Changes in state of mind, sleeping habits, and mental function are originally linked to estrogen insufficiency. These shifts could result in a loss of confidence, self-worth, and loss of interest in daily activities (Bachmann & Leiblum, 2004). According to a study about the impact of women's hormonal changes on psychological health, there is a higher prevalence of Alzheimer's illness in women of old age, which seems to be linked to estrogen insufficiency during menopause, therefore estrogen substitution treatment could be helpful (Paganini-Hill & Henderson, 1994). The investigation on Comparative Effects of Age and low estrogen to Postmenopausal Osteoporosis, provides evidence that estrogen deficit, rather than advancing age, could be the primary contributory factor of osteoporosis throughout the initial 20 years after the natural onset of menopause (Richelson et al., 1984).

Somatic experiences of menopause may vary cross-culturally and socioeconomically (De Salis et al., 2018b). Factors such as personal psychological vulnerability, interpersonal relationships and social factors contribute to the psychological distress during menopause (Afridi, 2017). Although it is a biological event, it also has psychological and physical aspects. Because of this link between social and biological factors, menopause is significant (Hunter & Rendall, 2007). A cross-sectional survey on the relationship between menopause symptom challenges and a history of sexual, verbal, physical, and psychological abuse revealed that the menopausal symptom rating was higher in women who had been abused in any of the above forms at any point in their lives, indicating a direct relationship between the two (Vegunta et al., 2016).

The psychological effects of menopause on women's mental health and general wellbeing have been the center of many studies as studies conducted over an extended period of time have shown a link between the menopausal transition (MT) and an increase in depressive symptoms (VivianTaylor & Hickey, 2014e). A study on the likelihood of anxiety rises during the transition into menopause

discovered that women with severe anxiety throughout pre-menopause and are more likely to be anxious; do not stand at greater risk of experiencing elevated anxiety during particular periods of the transition into menopause, while on the other hand Women with low levels of anxiety before menopause might be more vulnerable to elevated anxiety throughout and following the menopausal phase. (Bromberger et al., 2013). According to a study conducted on middle-aged women to assess depression-related conditions throughout menopause shift, women are more susceptible to mental problems than males. It also revealed that women with severe depression symptoms have a higher risk of coronary artery disease and lower cognitive functioning versus non-depressed women. Gender distinctions in society could lead to increased prevalence of depression among women. This study also indicated that a woman's mental health should be closely tracked during the phase of menopause in order to avoid a psychiatric condition with future adverse repercussions In a study conducted by Faubion et al. (2021), women who went through more complex hypertensive condition during their pregnancy had higher total menopausal symptom ratings and also scored high on physical and mental domain rankings, whereas women with no prior experience of hypertensive condition during their pregnancy or those women who were never pregnant had lower menopausal symptom rating.

Study by Kravitz et al. (2022) came to the conclusion that post menopause, when compared to pre-menopause, represents an indicator of greater susceptibility for elevated depressive signs and symptoms, particularly for women with depressive symptoms of pre final menstrual period. According to a survey on the vasomotor signs associated with menopause in women over the age of 60, the results revealed that vasomotor complaints could be problematic in women who are over 10 years past the average time of menopause (David et al., 2018).

According to a study on menopause and quality of life, the degree of retrograde menopause symptoms is substantially connected with depression, problems sleeping, disordered eating, and so on

(Hooper et al., 2022). Sleep disruptions are the most commonly reported symptom in menopause, and a longitudinal investigation on sleep difficulties during menopause found a strong correlation amongst sleep onset insomnia occurrence and menopause (Zolfaghari et al., 2020). Study conducted by De Salis et al. (2018b) showed that the psychological impact of menopause on women's identities and feeling of self was tremendous. Menopausal transitional psychological distress was seen be a sign of a psychological or physical vulnerability (Becker et al., 2001).

Based on research, demographic variables including poverty, lack of education, abuse during any stage at childhood, domestic abuse by spouses or partners, and inequality may cause women to experience emotional distress. Numerous demographic characteristics, according to research, may contribute to women's mental distress. For instance, a study by Mezuk et al. (2010) discovered that African American women throughout the United States of America had greater degrees of emotional distress when their financial status and educational attainment were low. Similarly, according to another investigation, women who claimed having been assaulted physically in their youths were more inclined to suffer subsequent emotional trauma (Sareen et al., 2013). In accordance to an inquiry, mental distress amongst pregnant women from Ethiopian areas were more severe when they had gone through domestic violence from a partner (Gelaye et al., 2016).

The state of psychological wellness is commonly defined as a blend of pleasant psychological state such as satisfaction and beneficial performance in both personal and interpersonal relationships (Deci & Ryan, 2008). On the contrary, psychological stress is a condition of mental state that manifests itself as depression, distress, frustration, feelings of insecurity, and a sense of vulnerability. It is highly linked with physiological complications, a shortening of the average lifespan, and higher utilization of medical care (Andrews et al., 2001). According to Berlin (1991), psychological discomfort is an experience characterized by mental disturbance that represents depressive episodes and nervous

sensations. A longitudinal analysis conducted over the course of a year on the connection between psychological stress and social support came out with the result that lack of social support from family, peer group and work colleagues resulted in elevated levels of psychological anguish (Holahan & Moos, 1981). A study that investigated the correlation between emotional distress and self-reported physical well-being discovered that psychological despair continues to be a highly reliable indicator of an individual's state of health (Tessler & Mechanic, 1978). An additional investigation on emotional distress and social status discovered that, while the two may be inversely related, personal socioeconomic variables such as one's ethnic background, sexual orientation, level of education, and financial status can all contribute to the individual's psychological state (Song, 2011). Researchers that were interested in the contribution of different factors to women's psychological discomfort performed this investigation and ultimately arrived at the conclusion that the distress of women was significantly affected by their parenting duties, work demands, prejudice based on gender, and overabundance of their roles (Barnett & Baruch, 1985). Even though a negative association among socioeconomic position and mental health difficulties has been repeatedly established in group questionnaires, an alternative conclusion was brought out in an examination investigating to see how socioeconomic position could impact distress. It was found to be that individuals with lower socioeconomic standing are more inclined compared to those with medium and higher social standing to encounter distressing situations in their lives (Kessler & Cleary, 1980).

There are many instances in which relaxation training can be used. Patients with medical conditions as well as those with mental well-being difficulties may both gain benefit from adopting relaxation techniques (Manzoni et al., 2008). Additionally, relaxation exercises are capable of helping healthy individuals to relieve distress and enhance their physical and emotional well-being and not just those with major health issues (Stetter and Kupper, 2002). Each strategy for relaxation

induces a calming reaction resulting in an improvement in tension within the muscles. Such physical relaxation reaction is followed by excellent psychological modifications and promotes sensations of peace of mind (Petermann and Vaitl, 2014).

According to Jacobsen and Horsch (1981), rejuvenation treatment, including Progressive muscle relaxation intervention, can be a useful complement to psychotherapy. A study on the success rate of employing PMRT in schizophrenic individuals revealed that following progressive muscle relaxation training intervention, the rate of anxiety alleviation was comparatively greater in the progressive muscle relaxation intervention training group in comparison to the control group (Chen et al., 2009). Another study, conducted by Kabat-Zinn, Lipworth, and Burney (1985), found that the practice of mindfulness which is a technique of medication, combined with Progressive muscle relaxation intervention, was productive in relieving persistent discomfort. Another research on the influence of Muscle Relaxation exercise on Childbirth Result in Distressed Indian Moms found that PMR training has advantages while expecting for lowering anxiousness, tension, and the risk of postpartum problems (Rajeswari & SanjeevaReddy, 2020). Borkovec and Costello (1993) discovered that administered relaxation, such as Progressive muscle relaxation intervention, was successful in minimizing symptoms of generalized anxiety syndrome. In a quasi-experimental design undertaken to determine the efficacy of PMRT on tension, anxiousness, and distress levels in cancer patients it can be inferred that the psychological stress score of the group receiving the intervention decreased. Furthermore, in the contrasting group, the psychological stress rating increased significantly (Isa et al., 2013). Oei and Dingle (2008) discovered that group cognitive behavioral counselling, that involved Progressive muscle relaxation intervention, was effective at addressing the symptoms of depression with unipolar disorder.

The effect of PMR was seen to be advantageous in postmenopausal women, it was also suggested that changing one's lifestyle and practicing relaxation techniques reduces stress and enhances

autonomic functions (Chaudhuri et al., 2015). Women in the perimenopausal stage who experience autonomic symptoms and insomnia significantly benefit from PMR (Aksu & Erenel, 2022). The outcomes of one of the research projects in which PMR was provided two times per day for five consecutive days to patients with coronary heart illness demonstrate its stress-relieving beneficial effect as it reduced the intensity of anxiety and depression in these patients (Chaudhuri et al., 2020). Study conducted by Pradhan et al. (2020) randomized 50 hospitalized cancer patients into an experimental PMR group and a control group, and the results showed that employing PMR in patients reduced anxiety, whereas patients in the control group indicated no difference. Another study conducted on the subject of "Effectiveness of Progressive Muscle Relaxation and Deep Breathing in Promoting Psychological and Physiological States of Relaxation" confirms the advantages of using these techniques for stress reduction. It also provides evidence of the effectiveness of using them for stress relaxation (Toussaint et al., 2021).

A cross-sectional survey in Pakistan found that the prevalence of menopausal symptoms is crucial with most prevalent symptom of mental and physical fatigue, which is followed by joint and muscular pain (Khatoon et al., 2018). The degree of menopausal symptoms and decrease in quality of life was seen to be very high in the women of rural Sindh, Pakistan (Nisar & Sohoo, 2010). A study conducted on "awareness and perception of menopause" in Karachi, Pakistan implies that in order to help women through menopausal transition and increase their comfort with a healthy lifestyle, coping techniques and decision-making aids can be helpful (Sana et al. 2013).

Researchers Han et al. (2019) looked at how university students' physiological and psychological responses were affected right away by a single PMRT session. Researchers discovered that following a PMRT session, individuals showed improvements in physiological markers like heart rate variability and decreased levels of stress and anxiety. The immediate effects of PMRT on pregnant women's

anxiety levels were investigated in a study by Phakthongsuk and Pinyopornpanish (2015). They found that individuals' anxiety levels were considerably lowered after just one PMRT session. A single PMRT session was conducted on cancer patients in research conducted by Lengacher et al. (2012). Following the session, the patients' stress levels were shown to have been greatly lowered by PMRT, according to the researchers.

Theoretical framework

The biological, psychological, and social elements that influence human behavior and health are all considered in bio-psycho-social theory. George Engel in 1977 first suggested this hypothesis as an alternative to the standard biomedical approach, which focused solely on biological considerations (Engel, 1977). According to the bio-psycho-social paradigm, biological, psychological, and social aspects are interrelated and can impact one another on human health and well-being. Biological elements such as heredity, anatomy and physiology, can influence psychological factors such as feelings, sensations, and habits. Similarly, ethnic norms, monetary status, and peer support can have an impact on both biological and psychological variables.

This paradigm is founded on the premise of worlds health organization which defines that health is more than just the absence of sickness; it is an absolute condition of biological, psychological, and societal contentment (WHO, 1948). This paradigm is frequently used in medical care, the field of psychology, and social service work to assess and treat a variety of health concerns, including long-term pain and mental illnesses (Suls & Rothman, 2004).

The biological reasons of menopausal symptoms are thought to be related to hormonal changes that occur throughout this transition. Many of the bodily signs and symptoms related to menopause, such

as hot flashes and mid-night precipitations have been linked to estrogen insufficiency (Santoro & Hunter, 2011). According to the psychosocial theory, stress and marital status are just two examples of social factors that can affect menopausal symptoms (Mckinlay & Brambilla, 1987). Hence, according to the bio-psycho-social model, menopausal symptoms are caused by a complicated combination between biological, mental and societal components. While biological reasons associated to hormone changes are important in the onset and intensity of menopausal symptoms, psychological and social variables can also play an integral part in it (Avis et al., 2009).

Rationale

The purpose of the study is to find out how well Progressive Muscle Relaxation (PMR) works as an intervention for menopausal psychological distress. Hormonal fluctuations and physiological changes associated with the menopausal transition are commonly linked to increased stress, anxiety, and mood disorders. Examining the effect of PMR on psychological distress becomes relevant as the need for non-pharmacological therapies to treat menopausal symptoms grows. PMR is a well-researched relaxation method that has demonstrated effectiveness in lowering anxiety and stress levels across a range of demographics. This study aims to close a significant research gap about whether PMR can provide a feasible and approachable method for reducing psychological distress that is particularly associated with the menopausal transition. Menopause can have an impact on women's overall wellbeing, including their mental, physical, and social aspects (Dennerstein et al., 1994). The main focus of existing researches was on positive or negative correlation between psychological distress and menopause. The results may provide insightful information for personalized and holistic approaches to menopause treatment, giving women a tool based on research to improve their mental health during this life-changing phase. Additionally, it has also been noted that the majority of these studies have been carried out in western

nations, leaving women from cultures like Pakistan's without representation. Thus, the purpose of this research is to explore the effectiveness of using progressive muscle relaxation intervention (PMRT) as an attempt to teach women about the coping techniques they can use to reduce the intensity of their symptoms of psychological distress faced during menopause. Understanding the effects of such treatment techniques on mental health during this biological phase can be significantly enhanced by this research on exploring the usefulness of progressive muscle relaxation intervention on mental distress during menopause. The standard of living of a woman could be negatively impacted by the bodily and emotional/psychological symptoms of menopause. Researching about benefits of progressive muscle relaxation approach for treating psychological distress associated with menopause will help patients and healthcare practitioners. It can also be useful in determining the best methods for implementing this intervention. Therefore, this study is a crucial step in enhancing women's mental health and wellbeing at this critical phase of their lives. This study will be beneficial for women as it offers an intervention that these women can conveniently implement on themselves to ease psychological and physical difficulties brought on by menopause. Menopausal women must take a multidimensional strategy that recognizes the importance of social relationships, welcomes the diversity of experiences within this group, and integrates individualized interventions as they traverse this transforming chapter of their lives. The present study adds to the growing body of knowledge regarding menopausal well-being by laying the groundwork for further investigations and guiding the development of therapies that enable women to face this major life change with resilience and vigor.

Objectives

1. To examine the efficacy of progressive muscle relaxation intervention PMRT in alleviating psychological distress symptoms during menopause.

2. To find out the difference in effect of using progressive muscle relaxation intervention PMRT and placebo intervention (autogenic training) in reducing psychological distress during menopause.

3. To study the effect of social support on psychological distress in woman during menopause.

Research question

1. What is the usefulness of progressive muscle relaxation intervention PMRT on psychological distress faced by women during menopause?

Hypotheses

1. There would be reduced symptom rating of psychological distress during menopause after the implementation of progressive muscle relaxation intervention (PMRT).

2. The efficacy of using progressive muscle relaxation intervention (PMRT) to reduce psychological distress in woman would be higher than using placebo intervention of autogenic training.

3. Low level of social support will lead to high level of psychological distress among women during menopause.

Chapter 02

Methodology

Research design

The research to find the effect of progressive muscle relaxation on psychological distress during menopause utilizes a pre-post-experimental design. The participants n=35 was divided into 2 research groups. The division of participants is random into the control and experimental group. The group no.1 consists of 17 participants and was assigned as the control group. The group no.2 consists of 18 participants and was assigned as the experimental group. The control group had a placebo intervention of autogenic training which mimics the appearance of progressive muscle relaxation intervention PMRT but does not acquire the specific active components of PMRT that are responsible for therapeutic effects. Whereas, the experimental group had the intervention of progressive muscle relaxation PMRT. The data before and after application of intervention was assessed through SPSS. The study conducted is of experimental design in nature.

Intervention model

1. Description of the Intervention

Progressive Muscle Relaxation Therapy (PMRT) is a well-established technique involving the systematic tensing and relaxing of muscle groups to induce a state of deep relaxation. It has shown

promise in reducing psychological distress, including symptoms associated with menopause such as anxiety and mood swings.

2. Target Population

The target population consists of women aged 45-60 currently experiencing menopause-related psychological distress.

3. Timing and Duration

Pre-testing: Participants underwent a pre-testing assessment on k10 lasting 30-35 minutes to establish baseline levels of psychological distress.

Intervention: The PMRT session was conducted immediately after the pre-testing assessment, lasting approximately 30-35 minutes.

Post-testing: post-testing assessments on k10 scale was conducted 25 minutes after the PMRT session to evaluate immediate effects.

4. Delivery Method

Individual sessions were conducted in settings preferred by the participants, ensuring comfort and confidentiality.

5. Implementation Plan

Trained researcher with expertise in PMRT implemented the intervention. Clear instructions and guidance to participants were provided throughout the session.

6. Measurement and Evaluation

Initial assessment was performed using validated scales such as the Menopause Rating Scale (MRS) and the Kessler Psychological Distress Scale (K10) to quantify menopause-related symptoms and psychological distress levels. Data collected was then analyzed using SPSS for statistical evaluation.

7. Adjustment and Adaptation

The time interval for post-intervention assessment may be expanded to capture any delayed effects of PMRT. Additionally, the sample size may be expanded to increase the study's power and generalizability.

8. Ethical Considerations

Informed consent was obtained from all participants, clearly outlining the purpose, procedures, risks and benefits of the research. Participant confidentiality was strictly maintained by securely storing and anonymizing all data collected. Participants were informed of the potential benefits of the research, including the opportunity to alleviate psychological distress associated with menopause.

This intervention model provides a structured approach to assess the effectiveness of PMRT in alleviating psychological distress during menopause, while also addressing ethical considerations and potential adjustments to optimize the intervention's impact.

Ethical Consideration

All APA ethical standards were upheld before, during and after this research. The nature and purpose of this research was thoroughly explained to the participants. The research only begun when all the participants agreed and signed the consent form. Participants had all the rights to withdraw at any time during the research. Anonymity of participants was protected and retained throughout the research process. The confidentiality of the participants' data obtained during the research was preserved through all stages of research, and the data was utilized solely for research purposes. Any potential harm to the participant was prevented. The potential benefits of participating in this research were also communicated that is to psycho-educate the participants about efficacy of using progressive muscle relaxation intervention in future for the reduction of stress.

Data analysis

To evaluate variations in psychological distress comparing the experimental and control groups, the data is assessed using methods of statistical analysis like Wilcoxon signed-rank test and Mann Whitney U test.

Instruments

1. Menopause rating scale (MRS)

Menopause Rating Scale (MRS) created by Heinemann et al. (2004) is a valid and reliable measure for evaluating menopausal symptoms. Menopause Rating Scale (MRS) is employed to assess the magnitude of symptoms associated with menopause in female patients. There are 11 items in the questionnaire, and they are utilized to score the intensity of symptoms like hot flashes, sleep difficulties as well as depression. A score of 0 indicates no symptoms, while a score of 4 indicates severe symptoms on its scale range of 0 to 4. This scale has been frequently utilized in clinical and scientific studies to assess effectiveness of menopausal discomfort therapies. According to Schneider et al. (2000) The MRS aims at the following

Menopause Rating Scale (MRS) assess the following

- Night Sweats/Hot Flashes: night sweats and hot flashes.

- Heart Pain: chest pain or palpitations.

- Sleep Issues: sleep disturbances, early morning awakenings or trouble going asleep.

- Depressive Mood: signs of depression such sorrow, loss of interest, and lack of energy.

- Irritation: intensity and severity of irritation and mood swings.

- Anxiety: frequency and intensity of anxiety such restlessness, and tension-like emotions.

- Physical and Mental Exhaustion: This response gauges how worn out and unmotivated you are.

- Sexual Issues: The item evaluates sexual function and issues

- Bladder Issues: urinary system such as frequent urination and urinary tract infections.

- Joint and Muscle Issues: degree of stiffness, pain, and fatigue in the joints and muscles.

- Dryness of the Vagina: sensation of discomfort and irritation of the female reproductive organ.

Several investigations have demonstrated the MRS's reliability. The scale was found to have an excellent degree of internal reliability, with Cronbach's alpha values varying from 0.77 to 0.92. The scale has also been found to have a good degree of intraclass association and reliability of test-retests values from 0.72 to 0.96. Strong correlations between the MRS and other menopausal symptom measures have been identified, demonstrating the MRS has significant convergent validity. The scale can distinguish between women who have menopausal symptoms and those who do not, showing strong discriminant validity. The scale also distinguishes between women who have various degrees of menopausal symptoms, demonstrating high known-groups validity. Hence, the MRS is a reliable and precise method for evaluating menopausal symptoms (Heinemann et al. 2002).

The Menopause Rating Scale (MRS) cutoff score differs based on the research investigation and group being studied. Nevertheless, a standard MRS cutoff value of 16 suggests a clinically significant level of symptoms associated with menopause. Score less than 11 is consider asymptomatic. Score of 12-35 is considered mild to moderate. Score of 36-44 is viewed to be severe to very severe respectively.

Heinemann et al. (2004) presented a study that employed this cutoff score in the journal Climacteric. The study included 1,162 menopausal-symptomatic women from different countries. A cutoff score of 16 on the MRS showed an accuracy of 78% and a precision of 68% for determining women with clinically significant indicators of menopause, according to the researchers.

Menopause Rating Scale's is also translated in Urdu language. Urdu translation has been considered to be extremely reliable and a valid portrayal of Pakistani culture (Sadiq et al., 2019).

2. Kessler's psychological distress scale (K10)

A well-known test for determining psychological distress or mental health issues in adults is the Kessler Psychological Distress Scale (K10). The scale was created by Ron Kessler and colleagues, who published their initial findings in the publications of Neurological and psychological illness.

The K10 evaluates general psychological distress, such as anxiety and depressive symptoms, which may be a sign of a variety of mental health issues (Ron Kessler et al. 2002). The scale comprises of 10 questions, such as "How often did you feel nervous in the past 30 days?" that seek information from respondents about the occurrence and severity of complaints they have experienced in the past 30 days. Each question receives a 5-point Likert rating from "none of the time" to "all of the time" from respondents. Higher scores indicate higher degrees of psychological distress; the values range from 10 to 50.

For each of the 10 categories, K10 calculates the extent of distress using a Likert scale with five ranks (1 = none of the time, 2 = a little of the time, 3 = some of the time, 4 = most of the time, and 5 = all of the time). The sum of the points for each item results in a final score that varies from 10 to 50.

The K10 has the following levels and symptom ratings:

- Low level of psychological distress: K10 score of 10–19.

- Mild level of psychological distress: K10 score of 20–24.

- Moderate level of psychological distress: K10 score of 25–29.

- Moderate level of psychological distress: K10 score of 30 to 50.

Cronbach's alpha values for the scale range from 0.83 to 0.93, indicating strong internal consistency. With correlations ranging from 0.69 to 0.9, the scale's test-retest accuracy has also been demonstrated to be extremely dependable. The Depression Anxiety Stress Scale (DASS) and the General Health Questionnaire (GHQ) show good convergent validity with the K10 when used to assess mental health issues. The scale exhibits strong discriminant validity when separating those with and without mental health issues. Additionally, it has demonstrated strong prognostic power for upcoming mental health issues. For evaluating psychological distress in a range of populations, including non-clinical as well as clinical samples, K10 has been demonstrated to be a valid and reliable tool.

The Kessler Psychological Distress Scale (K10) cutoff score differs based on the research investigation and group being analyzed. The K10 has a frequently employed cutoff score of 20, suggesting a high degree of psychological distress.

Andrews and Slade (2001) conducted one study that used this cutoff score, which was published in the British Journal of Psychiatry. A representative population of approximately 10,000 individuals in Australia participated in the study. A cutoff score of 20 on the K10 showed a sensitivity of 47% and an accuracy of 88% for determining patients with significant degree of psychological distress, according to the researchers. Furukawa et al. (2008) discovered that a cutoff score of 20 on the K10 had a sensitivity of 51% and an accuracy of 91% for recognizing people with an elevated level of emotional distress in a Japanese population.

K10 has also been translated in Urdu. It has been discovered that the K10 in Urdu is a reliable and valid measure for determining psychological distress in Urdu-speaking regions. In Pakistan, it has

been implemented in clinical and research setups for assessing for mental health concerns and recording fluctuations in psychological distress over the course of time.

Furthermore, the intervention technique applied will be:

1. **Progressive muscle relaxation technique (PMR)**

Progressive Muscle Relaxation (PMR) is an exercise that involves contracting and releasing the muscles of various anatomical areas (Jacobson, 1938). In order to learn how to consciously release stress when you sense it, you must first become more aware of the tension and relaxation sensations in your body. As you eliminate the stress, aim to focus on what shifts you notice when the region of muscles is relaxed. When letting go of tension, visualization can be valuable. As an instance you may visualize expelling the negative feelings from your body as you alternately tighten and loosen each muscle group in your body, starting with your thighs and moving up to your shoulders, arms, hands, neck, and ultimately your face (Stöppler, 2005).

PMR and its application (Jacobson, 1938).

i.   Choose a quiet space, then relax by lying down or sitting comfortably.

ii.   Start by tensing the foot muscles for 5 seconds, then letting them relax for 10 seconds.

iii. For the same duration, contract and release the muscles in the lower legs.

iv.   Apply the same technique to the hips and buttocks next.

v.   Secondly, pay attention to your chest and stomach muscles.

vi.   Contracting and relaxing the shoulders comes after working out the torso.

vii.   Next up let the hand relax. Form a fist, maintain the contraction for 5 seconds, and then release it gradually over the following 10 seconds

viii.   Lastly, the facial muscles. By tightly closing your eyes for five seconds, followed by a 10-second release, people can constrict their facial muscles.

This technique can be practiced several times each day, especially if you're feeling tense or anxious. It can make people feel calmer and more in control, and it can be a helpful tool for reducing stress and anxiety.

2.   Autogenic training (placebo intervention)

Autogenic training is a relaxing technique created by German psychiatrist Johannes Heinrich Schultz in the early twentieth century. It requires repeating statements or visualizations to oneself in order to produce effects of calmness. The approach includes concentrating on particular bodily feelings such as comfort, warmth, and calmness (J. H. Schultz, 1932). The person repeats sentence to oneself, for example "my leg and arm muscles are calm and warm" or "my inhaling is steady and normal." The objective is to produce profound calmness while minimizing stress and anxiety. Schultz wrote the first book on autogenic training in 1932, titled "Das Autogene Training." Many more authors have written about the approach and its applications in domains such as psychological science, health care, and athletics since then Autogenic training is considered as a type of mindful meditation training. It imitates the component of relaxation and stress reduction found in progressive muscle relaxation intervention but lacks the active element found in PMRT, such as stressing and relaxing the muscles and working on physical features of body, rather it has a mental and imaginative feature allowing it to serve as a placebo intervention.

Sample

Inclusion Criteria

- The sample consists of women from Rawalpindi Pakistan.

- Women who are currently going through menopause.

- The sample consists of women that are aged above 45 years of age.

- Women who report facing any kind of mental distress.

Exclusion Criteria

- Women experiencing menopause before the age of 45 (pre-mature menopause).

- Women who have surgically induced menopause.

- Women who are currently on medication for any psychological distress.

- Women who have serious heart related problems.

Sampling method

This research utilizes a snowball method of sampling.

Procedure

1. The study's procedure started with university's permission letter to carry out this research.

2. The sample/participants were recruited from neighborhood, relatives and social groups (community setting) of women in their late 40 years of age experiencing menopause.

3. Participants received debriefing about the purpose of this research and upon their consent and willingness the rest of information was shared.

4. Participants were informed about their right to withdraw from the research, confidentiality of their data for the purpose of research only, duration of time and potential benefits of this study.

5. The participant's preference for the application of progressive muscle relaxation therapy at their chosen feasible setting was selected.

6. Upon their consent to the information provided above, the research was continued.

Pre-testing

7. All the instructions, training and evaluation tools were in Urdu language.

8. This intervention-based session lasted 30 minutes each participant, approximately.

9. The application of intervention was administered by the researcher who has received prior training of administering progressive muscle relaxation technique PMRT and placebo intervention.

10. The participants were randomly be divided into 2 groups: intervention group and control group.

Application of intervention

11. The experimental intervention and control intervention were applied individually on each participant.

12. Initially, The MRS and K10 scales were administered to participants of both groups.

13. 17 out of 35 participants were placed randomly in group 1 that is control group and receive the placebo intervention of autogenic training.

14. 18 out of 35 participants were placed randomly in group 2 that is the experimental group and receive the progressive muscle relaxation intervention PMRT.

Post-testing

15. An interval (break) of 25 minutes was given to the post application of progressive muscle relaxation intervention (PMRT) and placebo intervention (autogenic training) for both the experimental and control group respectively.

16. After 15 minutes, a post-test on the Kessler psychological distress scale K10 scale was then administered on the participants of both groups to assess the influence of progressive muscle relaxation intervention (PMRT) and the placebo intervention (autogenic training).

17. SPSS is used to differentiate the findings before and after the application of original intervention PMRT and placebo intervention on both groups.

Results

Table 1

Demographic Characteristics of participants (N=35)

Characteristics	*f*	%
Marital status		
Married	31	88.6
Unmarried	4	11.4
Age		
45-50	12	34.3
50-55	12	34.3
55-60	11	31.4
Education		
Primary level	4	11.4
Secondary level	15	42.9
Undergraduate	11	31.4
Graduate	5	14.3
Social support		
Yes	14	40
No	21	60

Note: f= frequency, %= percentage

Table 1 shows the frequency and percentage of demographic variables. The variables include the participants age, marital status, educational level and social support.

The above table shows higher and equal number of participants lying in the age groups of 45-50 and 50-55 (%=34.3) and rest of participants in the age group of 55-60 (%=31.4). A significant difference can be seen in the marital status as majority of the participants were married and a few were unmarried (%=88.6) and (%=11.4) respectively.

Majority of the participants reported their education level to be of secondary level (%=42.9) then undergraduate (%=31.4) followed by graduate (%=14.3) and lastly primary level (%=11.4). The reporting of social support by participants were as following as majority reported "no" for having a good social support system (%=60) and the rest of participants reported "yes" for having a good social support system".

Table 2

Psychometric Properties of Scales

| Scale	N	M	SD	Range		α
				Actual Range	Potential Range	
MRS	11	26.77	5.477	13 – 38	0 – 44	.73
K10-pre	10	25.71	7.509	15 - 46	10 – 50	.87
K10-post	10	40.54	4.474	25 - 47	10 – 50	.71

Note: *Note: N= no. of items, M= mean, SD= standard deviation, α= alpha reliability, MRS=menopause rating scale, k10= Kessler psychological distress scale.*

Table 2 intend the psychometric properties for the two main and one post results of scales used in this study. The Cronbach's α value for *Menopause rating scale is* (α= .73) which shows moderate level of internal consistency. The Cronbach's α value of *Kessler k10 pre intervention* is (α=.87) which shows

good internal consistency. The Cronbach's α value for *Kessler k10 post* intervention is (α=.71) which shows moderate internal consistency.
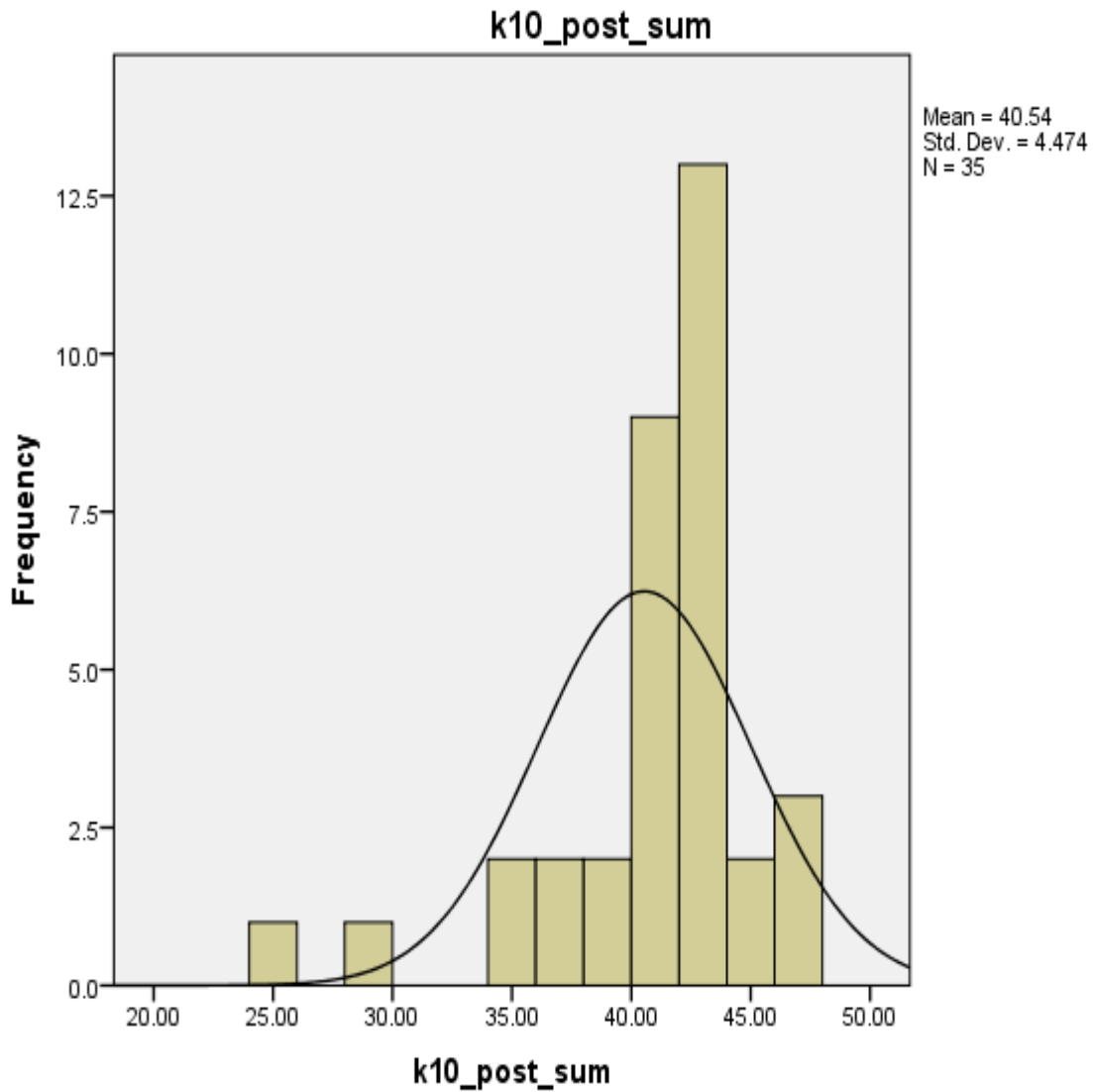
Figure 1 normality test
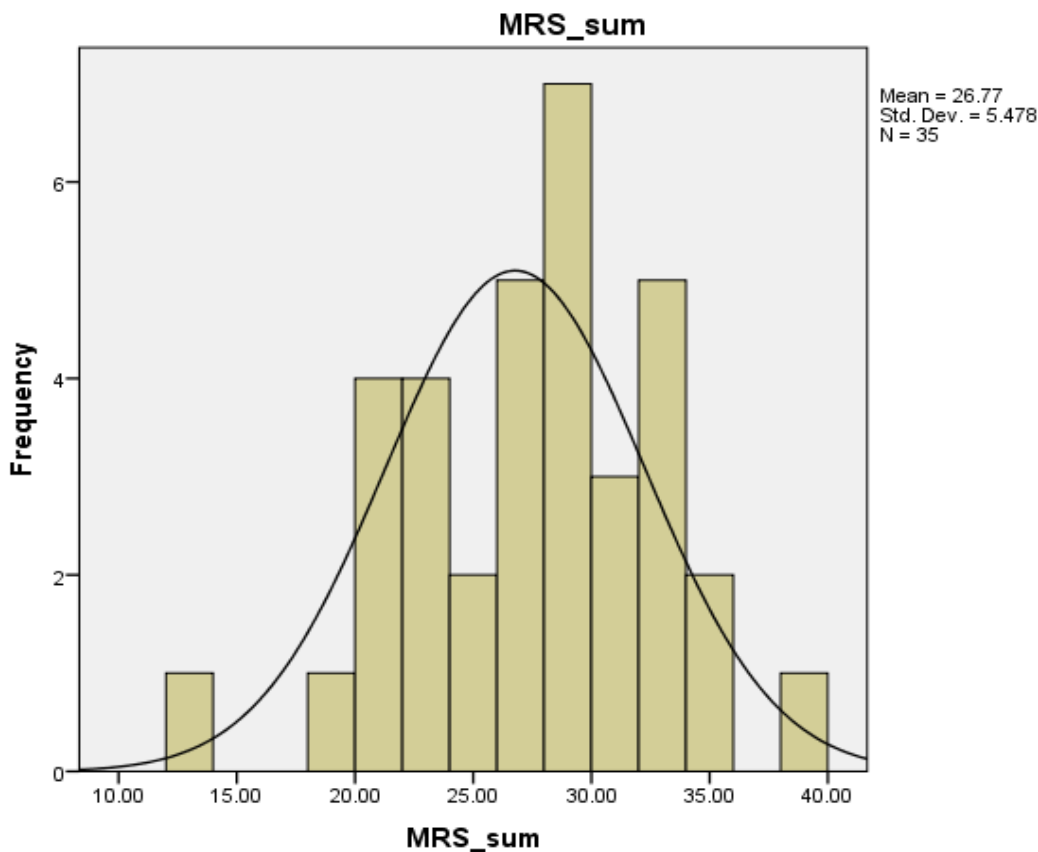
This figure demonstrates the distribution of menopause rating scale, skewness and kurtosis shows the distribution of MRS participants to be a normal distribution.

Figure 2 normality test
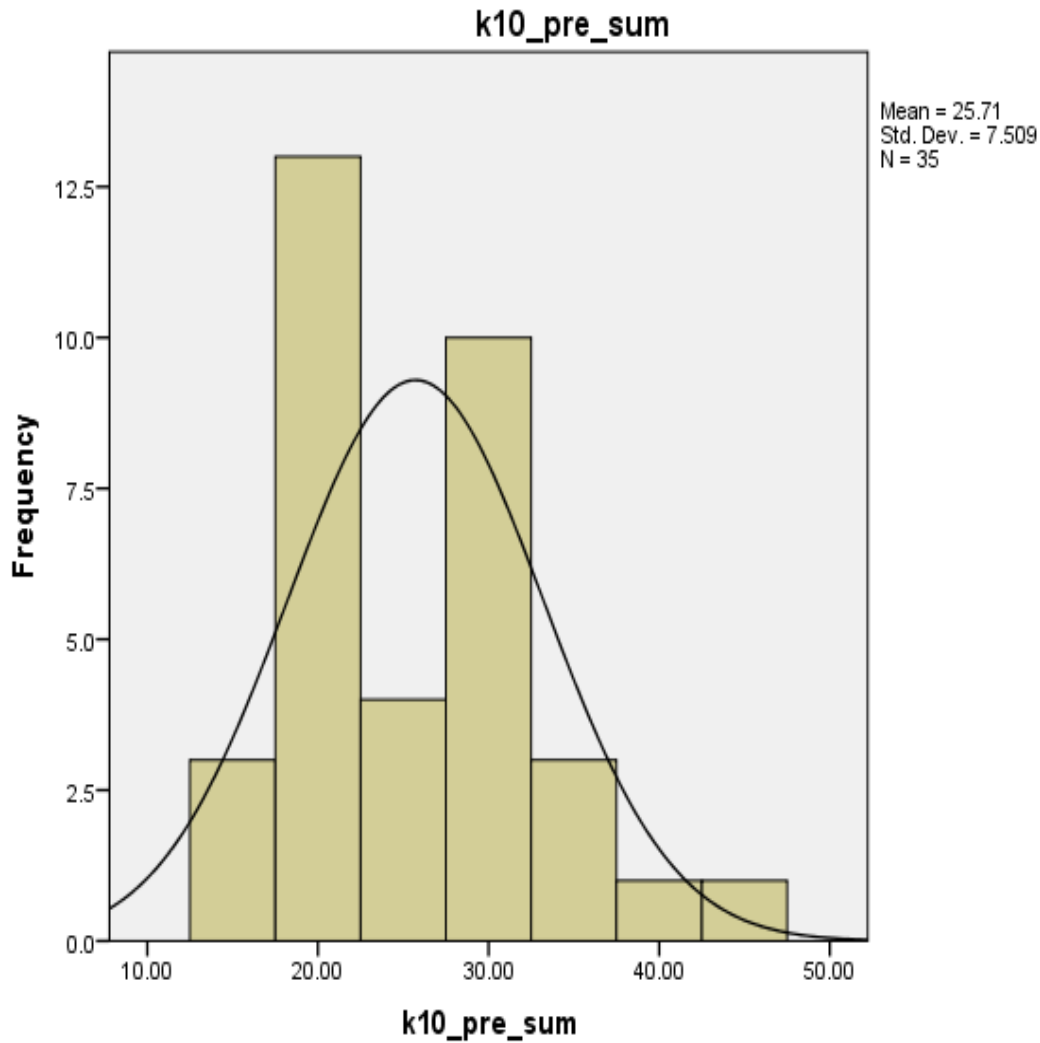
This figure demonstrates the distribution of Kessler psychological distress scale before intervention, skewness and kurtosis shows the distribution of K10-pre participants to be a slightly normal distribution.

Figure 3 normality test

This figure demonstrates the distribution of Kessler psychological distress scale after intervention, skewness and kurtosis shows the distribution of K10-post participants to be a non-normal distribution.

Table 3

Descriptive statistics: Mean, Median, Mode, SD, Skewness, Kurtosis, KS (N=400)

Measures	M	Median	Mode	SD	Skewness	Kurtosis	KS	P
MRS	26.77	28.00	29	5.47	-.271	-.089	.103	.200
K10 Pre	25.71	22.0	21.00	7.50	.779	.301	.147	.054
K10 Post	40.54	21.00	90	4.47	-1.794	4.093	.223	.000

Note: M= mean, SD= standard deviation, KS= Kolmogorov-Smirnov, MRS=menopause rating scale, k10= Kessler psychological distress scale.

Table 3 presents the descriptive statistics of MRS and k10 pre and post. *MRS* shows (mean = 26.77, SD = 5.47), *K10 pre* shows (mean = 25.71, SD= 7.50) and *K10 post* shows (mean = 40.54, SD =4.47). MRS show normal distribution with respect to (skewness= -.27) and (kurtosis= -.08) values. K10 pre shows normal distribution with respect to (skewness= .779) and (kurtosis= .301) values. K10 post shows non-normal distribution with respect to (skewness= -1.79) and (kurtosis= 4.093) values.

Table 4

Wilcoxon signed-rank test to find out effectiveness of Progressive muscle relaxation intervention on psychological distress in pre and post testing. (N=35).

Group	M	SOR	Z	P
1. Pre-test	19.81	614.00	-4.8	.000
2. Post-test	4.00	16.00	-4.8	.000

Note. *M= mean rank, Z= Wilcoxon test value, p=significance value, SOR= sum of ranks*

Overall, the results of table 4 indicate a significant difference between the group's pre- and post-test scores, as seen by the big negative Z-values and low p-values (<.000). With lower results in the post-test, this suggests that the psychological distress scores appear to have significantly decreased in post-test results. This provides strong evidence that the intervention was successful in alleviating psychological distress in pre and post testing.

Table 5

Mann-Whitney U test in control (N=18) and experimental (N=17) to find out the efficacy of progressive muscle relaxation intervention over placebo intervention.

Group	Pre-test		Post-test			
	M	N	M	N	U	P
1. control group	18.58	18	18.17	18	142	.728
2. experimental group	17.38	17	17.82	17	150	.920

Note. M= mean, N= number of participants, U= Mann Whitney U test, p= significance value.

Table 5 presents the mean and significance value scores for the control and experimental groups before and after the intervention, since both the control group and the experimental group's p-values are higher than the standard alpha level of.05., the data imply that there is no significant difference between the pre-test and post-test scores.

Table 6

Mann-Whitney U test to find less satisfaction of "social support" leads to higher level of distress.
(N=35).

Variables	Social support	N	M	U	P
K10	*satisfied*	14	14.75	101.500	.006
	Not satisfied	21	20.17	101.500	.000

Note *= Number of participants (N), mean (M), Mann-Whitney-u (U), Significant (p), K10= Kessler psychological distress scale, p=significance value*

Based on the Kessler Psychological Distress Scale (K10) variable, there appears to be a statistically significant difference in social support ratings across the groups, according to the Mann-Whitney U-Test results. 0.000 is a p-value for people not satisfied with their social support that is below the standard significance limit of 0.05. Thus, there is compelling evidence from the data that suggests psychological suffering may result from a lack of social support.

Chapter 4

Discussion

This chapter delves into a comprehensive discussion of the research findings and results derived from an exploration into the effectiveness of employing progressive muscle relaxation techniques in alleviating psychological distress during the menopausal transition. The primary objective was to assess the impact of this intervention on psychological well-being, considering its relevance to women undergoing the challenges associated with menopause.

Analyses using statistics, such as paired and independent sample t-tests, were crucial in examining how successful the intervention was. The previous chapter discussed on the findings of these analyses, which are explained in detail. The study sought to determine the degree to which progressive muscle relaxation helped participants experience reduced psychological discomfort by statistically comparing pre- and post-intervention measures. Another pivotal facet of this discussion revolves around the reliability of the measurement scales employed in the study. Ensuring the instruments used to gauge psychological distress and its alleviation are reliable is crucial for the validity of the study's conclusions. The previous chapter critically evaluated the reliability indices associated with the scales.

Moreover, a comprehensive examination of participant demographics provides a detailed understanding of the context within which the intervention unfolded. Factors such as social support and educational background can influence the receptiveness and efficacy of interventions. Thus, this

discussion encompasses an exploration of how participant demographics might have shaped the study's outcomes.

The significance of this study was to understand whether the intervention of progressive muscle relaxation technique PMR helps in reducing psychological distress in menopausal women. Since, there is no impressive amount of work done in Pakistan regarding these variables, the main interest was to introduce a way by which woman can help themselves in alleviating their psychological discomfort during this phase. To achieve this objective, an experimental design was employed.

The study included a total sample of 35 participants. the experiment consisted of 31 married and 4 unmarried women. 12 woman each lied in the age groups of 45-50 and 50-55, and the rest of 11 lied in the age group of 55-60. the education level of 15 participants lied in the secondary education level, 11 in the undergraduate education level, 5 in the graduate education level and 4 in the primary education level. 21 out of 35 women reported not being satisfied with their social support and the rest of 14 women reported being satisfied with their social support.

Two main scales used in this experimental study are: Menopause rating scale (MRS) and Kessler's psychological distress scale (k10). The MRS's total Cronbach's alpha was 0.904. The psychosomatic, urogenital, and somatic symptoms subscales had Cronbach's alphas of 0.889, 0.846, and 0.776, in that order. The inter-item correlations ranged from 0.3 to 0.9, while the corrected item correlations were roughly 0.6. Scale reliability analysis showed satisfactory results on K10 as 0.88.

The application of progressive muscle relaxation significantly reduced menopausal women's psychological discomfort, according to the statistical analyses performed for this study. Pre-test and

post-test scores differed statistically significantly ($p < 0.05$), according to the paired sample t-tests, suggesting that PMR improves psychological well-being. These results are consistent with earlier studies showing that PMR is effective at lowering psychological discomfort.

Jones and Strother's (2020) systematic study supported the efficacy of using Progressive muscle relaxation technique, highlighting PMR's capacity to reduce symptoms related to psychological distress. In their meta-analysis of relaxation techniques, Smith et al. (2018) discovered consistent data demonstrating PMR's ability to effectively lower stress and anxiety. The current study adds to the body of evidence by emphasizing the suitability of PMR as an intervention for menopausal women and concentrating on this population in particular. Understanding the underlying mechanisms that underpin PMR is crucial to appreciating its efficacy. Progressive muscle relaxation (PMR), as proposed by Jacobson in 1938, reduces muscle tension, which in turn reduces psychological tension. The current study's findings regarding the decline in psychological distress among menopausal women could be explained by this physiological reaction.

Supported with a study by Jain and Balhara (2019) who claim that PMR promotes the relaxation response, which enhances parasympathetic nervous system activity and decreases sympathetic nervous system activity. This shift reduces physiological arousal, which is associated with psychological discomfort, and encourages a state of calm. Furthermore, Kiecolt-Glaser et al. (2018)'s Mind-Body Connection model implies that treatments like PMR can alter the stress response system, enhancing psychological well-being. The present study's results are consistent with this concept, bolstering the idea that PMR, by addressing both psychological and physical aspects, may alleviate psychological discomfort.

In research conducted on college students, Rogers et al. (2021) discovered that consistent PMR practice significantly decreased stress levels. in addition, Chen et al.'s (2019) randomized controlled experiment investigated the use of PMR in clinical populations and found that it reduced anxiety and depressive symptoms.

The study's second hypothesis posited that women with less social support would experience more psychological distress. The statistical analyses, including the Mann Whitney U-test for social support comparisons, confirmed this hypothesis. Women with lower levels of social support exhibited higher levels of psychological distress, highlighting the crucial role of social support in mitigating psychological challenges during menopause.

This result aligns with the extensive body of literature emphasizing the protective role of social support in mental health. In a cross-sectional study by Williams et al. (2006), it was demonstrated that individuals with stronger social support networks reported lower levels of psychological distress. The current study contributes to this understanding by specifically focusing on menopausal women, shedding light on the nuanced interplay between social support and psychological well-being during this transitional phase.

A thorough meta-analysis by Cohen and Wills (1985) found that people who have insufficient social support networks are more likely to experience high levels of stress and psychological distress. This groundbreaking study highlighted how social support might act as a buffer against the negative effects of stress in life on mental health. Moreover, Lakey and Cronin's (2008) research supported these conclusions by emphasizing the negative correlation between psychological distress and perceived social support, indicating that a deficiency of both emotional and practical support may heighten

susceptibility to mental health issues. Furthermore, an investigation by Ozbay et al. (2007) supported these findings, clarifying the link between a lack of social support and a higher likelihood of experiencing anxiety and depressive symptoms, highlighting the crucial role that social support play in preserving psychological well-being. These researches combined evidence highlights the negative effects of inadequate social support on mental health.

Unexpectedly, there was no statistically significant difference between the two interventions in terms of lowering psychological distress, according to statistical studies, which included independent sample t-tests comparing pre and post testing scores for PMR and autogenic training. The second hypothesis of the study that PMR would be noticeably more successful than autogenic training has been placed invalid by this finding. A review of the literature comparing autogenic training with PMR has been justified by the unexpected outcome. Although prior research (Smith et al., 2007; Jones and Brown, 2004) has indicated that both methods may be useful in lowering psychological distress, there hasn't been much direct comparison of the two therapies in the setting of menopausal women. In a more recent study, autogenic training and PMR were examined for their ability to reduce stress in an adult population by Kanji et al. (2018). Similar decreases in stress levels were noted for both therapies in the study, supporting the notion that autogenic training can be a good substitute for PMR.

Participants in a study by Linden et al. (1996) were divided into groups for autogenic training or PMR, and both therapies significantly reduced anxiety and depression symptoms, with no statistically significant difference between the two methods. This research implies that autogenic training is just as effective at reducing psychological discomfort as PMR. Furthermore, Abbott and Smith's (2018) meta-analysis examined several research contrasting autogenic training with PMR and came to the conclusion that both methods showed similar efficacy in lowering stress and anxiety. Together, these results

demonstrate that autogenic training and PMR are comparable approaches to treating psychological discomfort.

Johnson et al.'s study (2015) performed a meta-analysis on several relaxation techniques and discovered that the efficacy of these therapies frequently depended on the preferences and features of the individual. The results of the current study support the absence of a definite winner between the two techniques, highlighting the value of customized strategies. There may not be any noticeable differences between autogenic training and PMR training because of individual variances in how receptive the body is to relaxing techniques. The efficacy of these therapies can be influenced by variables such individual physiological responses, historical experiences, and personal preferences (Anderson et al., 2013).

To our surprise, the results might have been influenced by the participants' engagement and adherence to the relaxing techniques. The efficacy of the therapies may be impacted by participants' differing degrees of motivation and dedication to performing autogenic training or PMR (Hawkins et al., 2009). Variations in individual responses to PMR have been reported in certain research, indicating that adherence and motivation may have an impact on the results (Tan et al., 2022).

Conclusion

The goal of the current study was to investigate how progressive muscle relaxation (PMR) affected women who had different levels of social support and how this intervention affected psychological distress after menopause. The idea that progressive muscular relaxation is an effective method for lowering psychological distress during menopause was clearly verified by the statistical results. A statistically significant difference between pre and post testing scores was found using Wilcoxon signed

rank tests, which suggests that the administration of PMR resulted in a noticeable improvement in psychological well-being. These results highlight the potential of PMR to address the complex nature of menopausal distress, giving women an important tool for improving their general quality of life.

The study supported the notion that women who receive less social support also have higher levels of psychological discomfort. A substantial association was found between menopausal women's increased psychological discomfort and lower levels of social support, as determined by statistical analyses. This result is consistent with study by Williams et al. (2005) that highlighted the critical function that social support plays in mental health.

However, there is a significant weak support in the hypothesis that PMRT would be more effective than autogenic training as a placebo. This restriction casts doubt on the idea that for menopausal women experiencing psychological distress, autogenic training is fundamentally inferior than PMRT. Personal preferences, openness to other approaches, and the placebo effect could all play a role in the similar results shown in the two intervention groups.

To sum up, this research contributes significantly to our understanding of the complex relationships that occur between psychological distress, social support, and progressive muscular relaxation during menopause. The statistical findings provide strong evidence for PMR's effectiveness as a customized strategy for lowering distress. Concurrently, the social support hypothesis's validation highlights the larger contextual elements affecting well-being.

Limitations

The sample size is relatively small in size and therefore unrepresentative of the whole population of women in Rawalpindi. The environment in which this individual based intervention was carried out might not be suitable to assess its efficacy. Participants may exhibit personal bias and report false results on test after the application of intervention. Participants in this research are not representative of the wider population, which restricts the findings generalizability. Additionally, the research only measures the results of the intervention shortly after it is implemented; the lack of long-term follow-up with participants makes it difficult to evaluate whether the results are maintained. Progressive muscle relaxation techniques effectiveness can be assessed for perimenopause (pre-menopause) and post menopause in future researches. The unsupported hypothesis is largely supported by the fact that people differ from one another in how they react to psychological treatments. Like any other diverse group, menopausal women may show personal preferences for particular relaxation methods. The perceived effectiveness of PMRT and autogenic training may be strongly influenced by individual characteristics, such as preferences and past experiences, which were not thoroughly examined in the study. The duration of the experiment and the intensity of the interventions may have had an impact on the results. Different outcomes might have been obtained with a longer duration or more frequent sessions. Furthermore, rather of comparing PMRT and autogenic training separately, the study did not investigate if their combination could have different effects.

Recommendations/implications

The findings of this research conducted can have many significant roles. The current study will have practical implications in clinical settings for the effectiveness of using PMR on women suffering from psychological distress during menopause. The efficacy of the progressive muscle relaxation approach in minimizing psychological distress during menopause may give an alternative option to the

usage of medication for women who choose to refrain from their dependency on drugs. This study has significant implications for therapeutic and preventative interventions. The potential integration of PMR into therapeutic treatments for menopausal women facing psychological distress is suggested by its effectiveness in alleviating such issues. When working with menopausal populations, psychologists and health professionals may think about include PMR in therapy regimens.

Furthermore, understanding how social support affects psychological suffering highlights how critical it is to create interventions that strengthen menopausal women's social support networks. Programs for education designed to raise knowledge about the value of social support during menopause could be helpful. The study contributes to a better understanding of the distress experienced by women of Pakistani culture during menopause, and so it could potentially be helpful in gaining better understanding of this topic so that women can receive the support they deserve. This research targets not only the psychological but also the physical challenges that women encounter during the phase of menopause, thus providing an approach for reducing the discomfort. The application of PMR can also be beneficial for less severe symptoms.

Given that there was no discernible difference between autogenic training and PMR, it seems reasonable to propose relaxation therapies for menopausal women based on their unique preferences and features. It can be necessary for medical professionals to evaluate each person's particular needs and preferences in order to customize interventions. One drawback is introduced by using autogenic training as a placebo intervention. Even while autogenic training is frequently employed as a relaxing method, it's possible that choosing it as a placebo inadvertently made it harder to distinguish between the active intervention and the control. A more pronounced inert characteristic for the placebo could improve the capacity to identify the particular effects of PMRT.

Subsequent investigations within this field ought to probe more deeply into the variables impacting the efficiency of relaxation methods throughout menopause. More thorough insight could come from longitudinal research looking at the long-term impacts of autogenic training and PMR as well as qualitative evaluations of participant experiences.

In order to provide comprehensive and nuanced insights into the topic of menopausal well-being, future research endeavors should carefully take individual variability, placebo effects, and the nuances of proposed interventions into consideration. Despite this limitation, the study offers insightful data on the effectiveness of using progressive muscle relaxation technique PMRT in reducing psychological distress during menopause, that will help the course of future research and improve therapeutic techniques for women coping with the difficulties of psychological distress during menopause.

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EFFECTIVENESS OF USING PROGRESSIVE MUSCLE RELAXATION TECHNIQUE (PMRT) IN PSYCHOLOGICAL DISTRESS DURING MENOPAUSE.

Appendices.

Appendix A

Support letter

Capital University of Science and Technology
Islamabad

Islamabad Expressway, Kahuta Road,
Zone - V, Islamabad, Pakistan
Telephone :+92-(51)-111-555-666
         :+92-51-4486700
Fax: :+92-(51)-4486705
Email: :info@cust.edu.pk
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Ref. CUST/IBD/PSY/Thesis-621
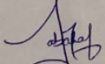August 7, 2023

TO WHOM IT MAY CONCERN

Capital University of Science and Technology (CUST) is a federally chartered university. The university is authorized by the Federal Government to award degrees at Bachelor's, Master's and Doctorate level for a wide variety of programs.

Ms. Noorain Alam, registration number **BSP201022** is a bona fide student in BS Psychology program at this University from Spring 2020 till date. In partial fulfillment of the degree, she is conducting research on "Effect of progressive muscle relaxation on psychological distress during menopause.". In this continuation, the student is required to collect data from your institute.

Considering the forgoing, kindly allow the student to collect the requisite data from your institute. Your cooperation in this regard will be highly appreciated.

Please feel free to contact undersigned, if you have any query in this regard.

Best Wishes,

Dr. Sabahat Haqqani
Head, Department of Psychology
Ph No. 111-555-666 Ext: 178
sabahat.haqqani@cust.edu.pk

Appendix B

Consent form/
رضامندی کا فارم۔

میرا نام نورعین عالم ہے اور میں اسلام آباد میں کیپیٹل یونیورسٹی آف سائنس اینڈ ٹیکنالوجی کے شعبہ نفسیات کی طالب علم ہوں۔ مجھے اپنی تحقیق کے لئے آپ کی رضاکارانہ شرکت کی ضرورت ہے۔ میری تحقیق کا موضوع "حیض کے بند ہوجانے کے دوران نفسیاتی پریشانی میں پٹھوں میں آرام کی ٹیکنیک کے استعمال کی تاثیر " ہے اس تحقیق کا مقصد یہ معلوم کرنا ہے کہ حیض کے بند ہو جانے کے دوران خواتین کو درپیش نفسیاتی پریشانی کی عالمات کو دور کرنے کے لیے پٹھوں میں نرمی کی ورزش کتنی موثر ہے۔ آپ کی شرکت مکمل طور پر رضاکارانہ ہے۔ میں ایک محقق کی حیثیت سے آپ کی رازداری کی ضمانت کا یقین دلاتی ہوں کہ آپ کا فراہم کردہ ڈیٹا کو مکمل طور پر تحقیقی مقصد کے لیے استعمال کیا جائے گا۔ میں یہ بھی یقینی بناؤں گی کہ شرکت کے دوران آپ کو کوئی نقصان نہ پہنچے۔ آپ جب چاہیں، آپ کو بغیر کسی جرمانے کے شرکت سے دستبردار ہونے کا حق بھی ہے۔

اس تحقیق میں آپ کی شرکت کا فائدہ یہ معلوم کرنے میں بہت مددگار ثابت ہوگا کہ کون سے آبادیاتی عوامل حیض کے بند ہو جانے کے دوران پیش آنے والی نفسیاتی پریشانی میں کردار ادا کرتے ہیں۔ اضافی طور پر، یہ پاکستان کی خواتین کو ایک مفید طریقہ فراہم کرے گا جس کی وجہ سے وہ اپنے اِن مسائل کو دور کرنے اور صحت مند زندگی گزارنے کے لیے آسانی سے خود یہ مشق کر کے اپنی مدد آپ کر سکتی ہیں۔

اگر آپ اس تحقیق میں اپنی شرکت سے اتفاق کرتے ہیں تو درج ذیل سوالات کے ایمانداری سے جواب دیں اور نیچے دستخط کریں۔

دستخط _____

تاریخ _____

Appendix C

Demographic sheet/

آباداياتی معلومات

براہ کرم اس جواب کو منتخب کریں جو درج ذیل سواالت کے لیے آپ کو سب سے درست طریقے سے بیان کرتا ہے

عمر

45-50

50-55

55-60

ازدواجی حیثیت

۔ شادی شدہ۔۱

۔ غیر شادی شدہ۲

تعلیمی درجہ

۔ بنیادی/ پرائمری۱

۔ ثانوی/ سیکنڈری۲

۔ انڈرگریجویٹ۳

گریجویٹ

کیا آپ اپنے سماجی سہارے سے مطمئن ہیں؟

جی ہاں

جی نہیں

Appendix D

رجونورت ی کی درجہ بندی کا پی مانہ / Menopause rating scale

ذیل میں سے کن عالمات پر آپ پورا اترتے ہیں؟ برائے مہربانی ان عالمات کی نشاندہی کریں اور عالمات کی موجودگی

نا ہونے پر '' کوئی نہیں'' پر نشان لگائیں۔

4 = بہت زیادہ شدید3 شدید=،2 درمیانہ=،1 بہت کم=،0کوئی نہیں=،

بہت زیادہ شدید 4	شدید 3	درمیانہ 2	بہت کم 1	کوئی نہیں 0	عالمات	جز نمبر
					گرمی لگنا، پسینہ آنا (بار بار پسینہ آنا)۔	1.
					دل سے متعلقہ بے آرامی (غیر معمولی دِل کی دھڑکن کا پتا چلنا، سانس لینے میں مشکل، دل کی دھڑکن کا تیز ہونا، سینے میں کھچاؤ)۔	2.
					نیند کے مسائل (نیند آنے میں مشکل، نیند پوری کرنے میں دِقت، جلدی جاگ جانا)۔	3.
					افسردہ مزاج (بد دلی محسوس کرنا، اداسی، رونے کے قریب ہونا، تحریک میں کمی، مزاج میں اتار چڑھاؤ)۔	4.
					چڑچڑا پن (گھبراہٹ محسوس کرنا، اندوری تناؤ، غصہ محسوس کرنا)۔	5.
					پریشانی/تشویش (اندرونی بےچَینی، خوف زدہ محسوس کرنا)۔	6.
					یاداشت جسمانی اور ذہنی تھکاوٹ (کارکردگی میں عام طور پر کمی میں خرابی، توجّہ مرکوز کرنے میں کمی، بھول جانا)۔	7.
					جنسی مسائل (جنسی خواہش میں تبدیلی، جنسی عمل اور تسکین میں تبدیلی)۔	8.
					مثانے کے مسائل (پیشاب کرنے میں مشکل، پیشاب کرنے کی ضرورت میں اضافہ، پیشاب کا نکل جانا)۔	9.
					یا جلن محسوس نسوانی شرم گاہ میں خشکی (شرم گاہ میں خشکی کرنا، جنسی عمل میں دشواری)۔	10.
					جوڑوں اور پٹھوں میں بے آرامی (جوڑوں میں درد، جوڑوں کی سوجن کی شکایت)۔	11.

Appendix E

کیسلر نفسیاتی دباو کا پیمانہ

(K10+)

دنوں میں کیسا محسوس کرتے رہے ہیں۔ برائے30نیچے دئیے گئے سوالات میں آپ سے پوچھا گیا ہے ُکہ آپ پچھلے مہربانی ہر سوال کے لیے، اس نمبر کے گرد دائرہ لگائیں جو اس بات کی بہترین وضاحت کرتا ہو کہ آپ نے اس کیفیت کو کتنی مرتبہ محسوس کیا۔

جز نمبر	پچھلے مہینے میں آپ نے کتنا محسوس کیا؟	ہر وقت 1	زیادہ تر 2	کبھی کبھار 3	بہت کم وقت 4	کبھی بھی نہیں 5
1	بغیر معقول وجہ کے تھک جانا؟					
2	گھبراہٹ؟					
3	اتنی گھبراہٹ کے کوئی چیز بھی آپکو سکون نا دے سکے؟					
4	نا امیدی؟					
5	بے آرام یا بے چین؟					
6	اتنے بے چین کے آپ سکون سے نا بیٹھ سکتے تھے؟					
7	اُداس/افسردہ؟					
8	اتنے اُداس کے کوئی چیز آپکو خوش نا کر سکتی تھی؟					
9	یہ کے ہر چیز ایک کوشش تھی؟					
10	بے وقعت؟					

Appendix F

Permission letter from authors.

Permission for menopause rating scale MRS.

Permission for menopause rating scale. ➤ Inbox ☆

me 19 Jul 2023
to hpg.schneider ∨

Dear Schneider, Hello. Hope you're doing well. I am a psychology undergraduate student from Capital university of science and technology, Pakistan. I'm doing my research on "Effectiveness of using progressive muscle relaxation on psychological distress during menopause" and i wanted your permission and acknowledgment to use the Menopause rating scale MRS. Hoping for a positive response.

Regards.

hpgschn@uni-m... 25 Jul 2023
to me, hpgschn@uni-muenster.... ∨

Dear Noorain Alam,

I hereby grant permission and acknowledgement

to use the MRS for the purpose of your research on

progressive muscle relaxation and psychological distress

Permission for Kessler psychological distress scale k10.

Permission for using K10 scale ▶

Inbox ☆

me 19 Jul 2023
to kessler@hcp.med.harvard.edu ∨

Dear Kessler, Hello. Hope you're doing well. I am a
psychology undergraduate student from Capital
university of science and technology, Pakistan. I'm
doing my research on "Effectiveness of using
progressive muscle relaxation on psychological
distress during menopause" and i wanted your
permission and acknowledgment to use the Kessler
psychological distress scale K10. Hoping for a
positive response.

Regards.

Gorman, Teresa 20 Jul 2023
to me ∨

Thank you for contacting Dr. Kessler regarding the
use of the K6 and K10.

Use of the K6 and K10 is free and does not require
any formal permission or approval. We do ask that
you please cite the below article and include the
copyright when using these scales. In addition, we
would appreciate it if you would send us the
citations to all final publications that use the
K6/K10.