

The Effects of Mindfulness-Based Self-Compassion Training for Menopausal Women on Their Genital Self-Image and Anger: A Randomized Controlled Trial

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Research Article

Keywords: Menopause, genital self-image, anger, mindfulness-based self-compassion training

Posted Date: October 1st, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-10991759/v1>

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Additional Declarations: No competing interests reported.

Abstract

Objectives

This study was conducted to determine the effects of mindfulness-based self-compassion training for menopausal women on their genital self-image and anger.

Method

This study was randomized with 126 menopausal women (study group $n = 63$, control group $n = 63$) between June 2024 and February 2025. Mindfulness-Based Self-Compassion Training (MBST) was applied in groups of 10 and 11 participants, once a week, for 8 sessions of 40 minutes. Data were obtained using the Personal Information Form, Female Genital Self-Image Scale (FGSIS), and DSM-V Level II Anger Scale.

Results

No significant differences were observed between the FGSIS and DSM-V Level II Anger Scale pre-test mean scores of the participants in the study and control groups ($p > 0.05$). However, the FGSIS post-test mean score was significantly higher in the study group than in the control group (21.03 vs. 17.76; mean difference = 3.27, 95% CI: 1.75–4.79; $p < .001$), and the effect size of this difference was large (Cohen's $d = 0.761$). In addition, when the DSM-V Level II Anger Scale post-test mean scores were compared, the mean score of the study group was significantly lower than in the control group (10.85 vs. 14.34; mean difference = -3.49, 95% CI: -4.98 to -2.00; $p < .001$) and the effect size of this difference was also large (Cohen's $d = 0.825$).

Conclusion

MBST was associated with improved genital self-image and reduced anger levels among menopausal women. These findings provide preliminary evidence supporting the potential effectiveness of MBST; however, larger multicenter randomized controlled trials with longer follow-up periods are needed to confirm these findings.

Trial registration:

Clinical Trials Protocol Registration and Results System (Clinicaltrials.gov), NCT06942169 Date of registration 16.04.2025, retrospectively registered.

Introduction

Menopause marks the permanent cessation of menstruation due to the loss of ovarian follicular activity, indicating the end of a woman's reproductive phase (WHO, 2024). The World Health Organization (WHO) reports a steady increase in the population of postmenopausal women worldwide; in 2021, women over the age of 50 constituted 26% of all women globally, representing a substantial rise compared to the previous decade (WHO, 2024). This demographic shift has brought heightened attention to the psychological and physiological implications of menopause.

The menopausal period is marked by physical and mental changes, including a decline in genital organ functionality, that are frequently accompanied by negative body image, low genital self-image, and sexual dissatisfaction (Bilgin et al., 2022; Schick et al., 2010; Dundon & Rellini, 2010).

Genital self-image constitutes a cognitive-affective evaluation of one's genitals, encompassing both psychological and behavioral facets of sexual self-perception, and reflects a woman's emotional attitude toward her genitalia as a sub-component of body image (Schick et al., 2010). Negative genital self-image is associated with higher rates of sexual dysfunction, avoidance of gynecological examination, delayed diagnosis of reproductive cancers, unhealthy coping behaviors, shame, distorted perceptions of bodily autonomy, an increased inclination toward cosmetic genital surgery, and maladaptive social comparison fueled by media portrayals (Ålgars et al., 2014; Herbenick & Reece, 2010; Zielinski, 2012).

This raises the question of why some women pursue cosmetic genital surgery: dissatisfaction with one's body in this context may stem partly from difficulties accepting the menopausal process and from anger directed at the body. In their study with menopausal women, Özcan et al. found that as menopausal complaints increased, so did anger (Özcan et al., 2022). However, evidence examining the relationship between menopause-related changes and anger remains limited.

To improve the mental and physical health of women and to treat the various psychological problems they experience, it is important to define, understand, and develop coping skills for 'anger' states. Unresolved anger, including anger directed at one's own body, has been linked to adverse psychological and physical health outcomes (Kurtoğlu & Başgöl, 2021). There are a limited number of studies in the literature reporting the anger levels/reasons of women in the menopausal period (Özcan et al., 2022). Studies have mostly focused on depression, anxiety, and stress during menopause (Soares, 2019; (Mulhall et al., 2018; Yazdanpanahi et al., 2018; Minkin, 2019). Menopause is one of the periods that women go through throughout their lives that include difficult mental states. It was presented that during this period, women feel bad, sad, tearful, and unmotivated, experience changes in their mood, and are intertwined with complicated symptoms such as irritability, tension, sudden feelings of anger, restlessness, panic, decreases in general performance, and weakening of memory (Sözer & Ege, 2021).

Mindfulness-Based Self-Compassion Training (MBSCT) provides a psychologically integrative approach aimed at enhancing individuals' capacity to observe their bodily and emotional experiences with acceptance, compassion, and nonjudgment. It encourages individuals to recognize negative self-evaluations without self-criticism, fostering emotional resilience and psychological flexibility. Previous studies suggest that mindfulness and self-compassion contribute to improved emotional well-being and

self-acceptance in menopausal women by reducing negative self-judgment (Brown, 2015; Arab et al., 2020). In addition, emerging literature highlights its potential in enhancing body image, promoting positive self-perception, and mitigating emotion dysregulation. Mindfulness-based approaches have also been shown to support emotional recovery following loss and trauma and to improve well-being in other stressful life contexts, underscoring their broad applicability as a coping resource (Lathabhavan et al., 2025; Lathabhavan & Mehendale, 2025).

Both psychiatric nursing and midwifery disciplines have the potential to incorporate mindfulness and compassion-based training to promote psychological well-being, body acceptance, and emotional regulation. Such interventions may empower menopausal women to navigate psychological challenges, reduce shame and discontent related to bodily changes, and develop realistic and compassionate perspectives toward themselves.

To date, no randomized controlled trial has examined the effect of a mindfulness-based self-compassion intervention on genital self-image and anger together in menopausal women; the relationship between these two constructs and their responsiveness to self-compassion-based intervention therefore remains theoretically and empirically unexplored. Given this identified theoretical gap regarding anger and genital self-image in menopausal women, and the limited number of studies incorporating self-compassion interventions in this population, the current study was designed to explore the effects of MBST on genital self-image and anger in menopausal women.

Research Hypotheses:

Consistent with self-compassion theory, cultivating self-kindness, common humanity, and mindful awareness is expected to reduce harsh self-judgment and support a more accepting evaluation of one's body, including genital self-image (H1), and mindfulness-based emotion-regulation processes are expected to reduce reactive, self-directed negative affect such as anger by fostering nonjudgmental awareness and acceptance of difficult emotions (H2). These expectations are consistent with prior randomized controlled trials and systematic reviews reporting that self-compassion- and mindfulness-based interventions improve body image and emotional well-being (Guest et al., 2019; Toole et al., 2021; Han & Kim, 2023).

H1: MBST applied to menopausal women enhances the genital self-image of individuals.

H2: MBST applied to menopausal women reduces individuals' anger levels.

Methods

Study Design

This research was designed as a randomized controlled trial to evaluate the effectiveness of mindfulness-based self-compassion training (MBSCT) on genital self-image and anger among menopausal women. The study was conducted in a Family Health Center (FHC) located in an eastern region of Türkiye, and the data collection process was carried out over eight months, between June 2024 and February 2025. All methodological procedures were planned in accordance with the Consolidated Standards of Reporting Trials (CONSORT) criteria, ensuring scientific rigor and standardization throughout the selection, allocation, intervention, and evaluation stages of the study.

Population of the Research and Sample Selection

The target population consisted of menopausal women aged 45 to 70 who were registered at the selected FHC during the data collection period. The inclusion criteria required participants to (a) be aged between 45 and 70, (b) have experienced natural menopause within the last year, (c) have no diagnosed psychiatric disorders, (d) not be receiving hormone replacement therapy, and (e) have no significant hearing impairments that could affect participation in the training. The criterion of natural menopause within the last year was chosen to focus on women in the early postmenopausal period, when genital and psychological changes associated with menopause are most recent and salient; we acknowledge that this restricts the generalizability of the findings to women in later postmenopausal stages, as discussed in the Limitations. Women who had undergone surgical menopause or initiated hormone therapy during the research process were excluded from the study.

A total of 173 women initially met the age and registration criteria. After eligibility screening, 23 were excluded for not meeting the inclusion parameters, and 19 declined participation. The remaining 131 women were accepted into the sample pool. Before randomization, 5 women (3 of the eventual study group and 2 of the eventual control group) withdrew or were lost to contact during the enrollment phase; the remaining 126 women were randomly assigned to either the study or control group. The sample size was determined using an a priori power analysis performed with G*Power software. The Female Genital Self-Image Scale (FGSIS), prospectively designated as the primary outcome, was used for the sample-size calculation. The calculation was based on previously published FGSIS data reporting a mean score of 20.07 with a standard deviation of 4.28 (Ayar et al., 2021). Assuming a minimum clinically relevant between-group difference of 2 points in FGSIS scores, a two-sided significance level of $\alpha = 0.05$, and statistical power ($1 - \beta$) of 0.80, the required sample size was calculated as 63 participants per group (total $N = 126$). The DSM-5 Level II Anger Scale was designated as a secondary outcome and was therefore not used to determine the required sample size. 126 randomized women (63 in each group) completed the study and provided post-intervention outcome data; therefore, no participants were lost to follow-up or excluded from the analysis after randomization.

Randomization Procedure

Simple randomization was used to assign eligible participants to either the intervention or control group. The allocation sequence was generated by an independent researcher who was not otherwise involved in the recruitment, enrollment, or delivery of the study. The process involved generating two groups (coded as Group 1 and Group 2) using the Random Integer Generator tool on the random.org platform. The numbers 1 and 2 were randomly listed against participant IDs from 1 to 126, corresponding to the 126 women who remained eligible for randomization after the enrollment-stage attrition described above. Before the commencement of the intervention, a lottery draw was conducted to determine which number corresponded to the intervention or control group. As a result, the numbers labeled "1" were assigned to the study group, and those labeled "2" were assigned to the control group. Participants were enrolled and assigned to groups by the study team, in the order of their visits to the FHC. A formal allocation-concealment mechanism (e.g., sequentially numbered, sealed envelopes) was not used; this is acknowledged as a limitation, as it cannot fully exclude the possibility that enrolling staff could anticipate the next allocation. Outcome assessment was not blinded, as the same research team delivered the intervention and collected outcome data. The statistical analysis was also conducted without blinding to group allocation. This randomization approach was maintained until both groups reached the finalized sample size. The full progression of participant flow was organized and illustrated in accordance with CONSORT guidelines (Fig. 1); no participants were lost after randomization.

Data Collection Tools

Personal Information Form

The form, created by the researchers after a literature review, consisted of seven questions, including the sociodemographic and menopause-related characteristics of menopausal women (age, educational level, marital status, income, employment, age at menopause, and presence of a chronic disease). Income level was classified based on the household income-to-expenditure ratio, as high (income greater than expenditure), medium (income equal to expenditure), or inadequate (income less than expenditure).

Female Genital Self-Image Scale (FGSIS)

The Female Genital Self-Image Scale (FGSIS) was the prospectively designated primary outcome of this trial and was used for the sample-size calculation; the DSM-V Level II Anger Scale, described below, was a secondary outcome. The FGSIS was developed by Herbenick and Reece (2010) in the United States to measure women's genital self-perceptions (Herbenick & Reece 2010). The Turkish adaptation of the scale was made by Karadeniz in 2019. The FGSIS consists of 7 items. The lowest score that can be obtained from the scale is 7, while the highest score is 28. A high FGSIS mean score indicates a positive genital self-image. The Cronbach's alpha reliability coefficient of the scale was determined as 0.90 (Karadeniz, 2019). In this study, Cronbach's alpha reliability coefficient was calculated as 0.89.

DSM-V Level 2 Anger Scale

The Turkish validity and reliability of the Level II Anger Scale prepared by the American Psychiatric Association for DSM-V was conducted by Çöldür et al. (2017) (Çöldür et al., 2017). The DSM-V Level II Anger Scale is a five-item self-report scale used to measure the severity of anger in adults and provides a practical measurement. Each item asks the individual to rate the severity of their anger over the last 7 days. Scale scoring ranges from 5 to 25. As the score obtained from the scale increases, the level of anger also increases. The Cronbach's alpha reliability coefficient of the scale was determined as 0.90 (Çöldür et al., 2017). In this study, Cronbach's alpha reliability coefficient was calculated as 0.88.

Interventions

The MBSCT intervention content was originally implemented as a structured nine-week training program in 2023. For the present study, it was adapted into an eight-session program delivered over eight weeks, with women meeting once a week for 40-minute sessions, conducted between 10:00 and 10:40 a.m. in the Family Health Center's training room. Participants were contacted via telephone, briefed about the study objectives and procedures, and verbal confirmation of interest was obtained. Women who agreed and met the inclusion criteria were formally invited to participate.

For the intervention, 63 women in the study group were divided into six subgroups (three with 10 and three with 11 participants). The program included experiential practices focusing on mindfulness, body awareness, compassion cultivation, and emotional regulation. Sessions encouraged participants to recognize and accept bodily and emotional experiences without judgment, focusing particularly on anger, menopause-related changes, and emotional distress. No psychological or educational intervention was provided to the control group during the study period; the control condition was a no-treatment/usual-care control that did not include any menopause education, psychological support, or other related intervention. However, after completion of all data collection phases, women in the control group were offered access to the training materials for ethical purposes.

The MBSCT protocol was adapted from the Mindful Self-Compassion (MSC) program developed by Neff and Germer, delivered here as 8 sessions over 8 weeks rather than the original 9-week format (Neff & Germer, 2013). The training was delivered by a nurse instructor certified in Mindful Self-Compassion (MSC). Each participant received a printed booklet, and audio recordings of the guided meditations were provided; participants were asked to practice the meditation introduced in each session at home at least 3 times per week as homework. With participants' written and verbal consent, sessions were audio-recorded and archived; a second researcher reviewed the recordings to monitor intervention fidelity. Attendance was recorded at the beginning and end of each session; mean attendance among study-group participants exceeded 70% of sessions. No formal cultural adaptation of the original Mindful Self-Compassion program was undertaken for the present study. A session-by-session summary of objectives, content, and practices, following the TIDieR (Template for Intervention Description and Replication) checklist, is provided in Appendix 1.

Data Collection and Timeline

Quantitative data were collected using the Personal Information Form, Female Genital Self-Image Scale, and DSM-V Level II Anger Scale. The Pre-test (T1) was administered to both the intervention and control groups before MBSCT practices began. Following the completion of eight weeks of training, the same scales were administered as Post-test (T2) to both groups. No follow-up assessment was conducted beyond the immediate post-intervention assessment (T2) due to time constraints.

Data Analysis

Data were analyzed using SPSS 26.0 software. Normal distribution of quantitative variables was assessed using Shapiro-Wilks and Kolmogorov-Smirnov tests, alongside histogram, P-P plot, and Q-Q plot visual inspections. For variables that met normal distribution criteria, descriptive statistics (mean, standard deviation, and percentage) were applied. Homogeneity of variance for independent-samples comparisons was assessed using Levene's test; this assumption was satisfied for all reported comparisons. Between-group comparisons of independent samples were conducted using independent samples t-test and chi-square tests where appropriate. Within-group comparisons for pre-test and post-test data were conducted using paired samples t-test. In cases where statistically significant differences were identified, effect sizes were calculated using Cohen's d formula, together with the mean difference and 95% confidence interval. The significance level was set at $p < 0.05$. All questionnaires included in the final analysis were completed in full, with no missing item-level data. As the DSM-V Level II Anger Scale was a secondary outcome, no formal statistical adjustment for multiplicity was applied, and secondary-outcome findings should be interpreted accordingly.

Ethics

Prior to initiating the study, approval was granted by the Scientific Research and Publication Ethics Committee of Inonu University (Approval No: 2023/4613). Legal permissions were also obtained from the relevant health institutions where data collection occurred. All participants were informed verbally and in writing regarding the goals, procedures, confidentiality, anonymity, and voluntary nature of participation. They were also informed that they could withdraw at any time without penalty or consequence. Informed consent was obtained verbally and in writing from all participants. The study adhered strictly to the principles outlined in the Declaration of Helsinki. Clinical Trials Protocol Registration and Results System (Clinicaltrials.gov), NCT06942169 Date of registration 16.04.2025, retrospectively registered. The trial was registered retrospectively; the research team was not aware of the prospective registration requirement at the time the study commenced and completed registration as soon as this was identified.

Results

The study was completed with a total of 126 participants (63 participants in the study group and 63 participants in the control group). Each stage of the participants' records is given in detail in Fig. 1. It

was determined that the sociodemographic characteristics of the participants (age, age at menopause, marital status, income, employment, and presence of a chronic disease) were similar ($p > 0.05$) (Table 1).

Table 1
Comparison of the women's sociodemographic characteristics

Characteristic	Study group (n = 63)		Control group (n = 63)		Test ^a and P value
	n	%	n	%	
Mean age/year	56.26 ± 4.22		55.59 ± 6.95		t=-0.557 P = 0.578
Age at menopause	48.34 ± 4.10		47.93 ± 4.84		t=-0.516 P = 0.607
Marital status	40	63.5	47	74.6	$\chi^2=1.820$
Married	23	36.5	16	25.4	P = 0.177
Single					
Educational level	18	28.6	15	23.8	$\chi^2=0.912$
Primary education	20	31.7	25	39.7	P = 0.634
High school	25	39.7	23	36.5	
University and above					
Income	8	12.7	10	15.9	$\chi^2=2.443$
High	11	17.5	15	23.8	P = 0.486
Medium	44	69.8	37	58.7	
Inadequate					
Employment	16	25.4	10	15.9	$\chi^2=1.745$
Employed	47	74.6	53	84.1	P = 0.187
Unemployed					
Presence of a chronic disease	34	54.0	35	55.6	$\chi^2=0.032$
Present	29	46.0	28	44.4	P = 0.858
Absent					
^a Chi-squared test; Independent-samples t-test used for Mean age/year and Age at menopause					

Table 2 shows the pre-test and post-test FGSIS and DSM-V Level II Anger Scale mean scores of the participants. There was no difference between the pre-test FGSIS and DSM-V Level II mean scores of the

study and control groups ($p > .05$). The post-test FGSIS mean score was significantly higher in the study group than in the control group (21.03 vs. 17.76; mean difference = 3.27, 95% CI: 1.75–4.79; $p < .001$); the effect size was large (Cohen's $d = 0.761$). The post-test DSM-V Level II Anger Scale mean score was significantly lower for the study group (10.85 vs. 14.34; mean difference = -3.49, 95% CI: -4.98 to -2.00; $p < .001$); the effect size was large (Cohen's $d = 0.825$).

Table 2
Comparison of the FGSIS and DSM-V mean scores of the study and control groups

	Study group (n = 63)		Control group (n = 63)		Test ^a and p value	Effect Size (d)
	Mean ± SD		Mean ± SD			
FGSIS						
Pre-test	16.39 ± 5.68		17.28 ± 3.94		t=-1.019	0.761
Post-test	21.03 ± 4.52		17.76 ± 4.06		t = 4.267	
						P = 0.310
						P < 0.001
Test ^b and p value	t=-5.513	P < 0.001	t=-0.799	P = 0.427		
DSM-5						
Pre-test	14.68 ± 4.33		13.93 ± 4.77		t = 0.918	0.825
Post-test	10.85 ± 4.36		14.34 ± 4.09		t=-4.628	
						P = 0.361
						P < 0.001
Test ^b and p value	t = 5.424	P < 0.001	t=-0.617	P = 0.540		
FGSIS: Female Genital Self-Image Scale, DSM-5: DSM-5 Level II Anger Scale, SD: Standard Deviation, ^a Independent-samples <i>t</i> -test, ^b Paired-samples <i>t</i> -test						

^d, Cohen's d represents the standardized effect size for the post-test between-group comparison; values of approximately 0.20, 0.50, and 0.80 indicate small, moderate, and large effects, respectively.

For the post-test between-group comparisons, the mean difference and 95% confidence interval (CI) were as follows: FGSIS, mean difference = 3.27, 95% CI: 1.75–4.79; DSM-V Level II Anger Scale, mean difference = -3.49, 95% CI: -4.98 to -2.00. For the within-group (paired) pre-post comparisons, the mean difference and 95% CI were: study group FGSIS, 4.64 (95% CI: 2.96–6.32); control group FGSIS, 0.48 (95% CI: -0.72-1.68); study group Anger Scale, -3.83 (95% CI: -5.24 to -2.42); control group Anger Scale, 0.41 (95% CI: -0.92-1.74).

Discussion

The findings of the study conducted to determine the effects of mindfulness-based self-compassion training for menopausal women on their genital self-image and anger were discussed in line with the literature. The findings of the study revealed that there was a significant increase in genital self-image score after mindfulness-based self-compassion training and that this effect had a large effect size. In addition, a significant decrease in anger levels was found after the training, and this decrease also had a large effect size.

Mindfulness-Based Self-Compassion Training is a very comprehensive approach that addresses individuals' awareness and acceptance of their bodies, as well as encouraging them to live consciously. Studies reported that self-compassion enables individuals to accept themselves without judgment and criticism, increases well-being, and increases their ability to cope with negative emotions (Brown, 2015; Arab et al; 2020; Muris & Otgaar, 2023).

Menopause is a critical period in which women's perceptions of body image and sexuality change, and during this process, women often feel dissatisfied with their bodies, experience a decline in their genital self-image, and have difficulty coping with negative emotions such as anger (De Salis, et al., 2018; Bilgin et al; 2022; Vincent et al., 2023).

Consistent with H1, MBSCT was associated with a significant improvement in genital self-image, supporting this hypothesis. The present study determined that the FGSIS mean score after MBSCT training was significantly higher in the study group than in the control group and the effect size was large. One possible explanation for this finding is that MBSCT may support a more accepting perspective toward bodily changes by promoting mindful awareness and self-compassion, which may in turn contribute to a more positive genital self-image. It can be said that the improvement in genital self-image is related to women evaluating their bodies more objectively and compassionately during the training process. Previous studies presented that interventions that increase body awareness and acceptance have positive effects on sexual health and body image (Guest, et al., 2019; Givehki et al., 2018; Shen et al., 2024). In addition, it was reported that self-compassion reduces women's dependence on beauty standards imposed in the media and contributes to the development of a more realistic body perception (Turan et al., 2024; Siegel et al., 2020). Systematic reviews and meta-analyses, especially in recent years, emphasized the effects of self-compassion-based interventions on body image (Toole et al., 2021; Nightingale & Cassin, 2023). In a directly comparable population, a randomized controlled trial of a mind-body exercise intervention (Qigong) among postmenopausal women similarly reported significant improvements in genital self-image and sexual function (Carcelén-Fraile et al., 2022), corroborating the present findings. The results of the present study are consistent with these findings and present that the genital self-image of menopausal women can be improved with self-compassion-based interventions.

The menopause period is characterized by anger, restlessness, and emotional fluctuations in women due to the influence of social perceptions as well as hormonal changes (Polat & Geçiçi, 2021; Handy et al., 2022). In a study conducted by Polat et al. (2022), it was presented that as the severity of menopausal

symptoms increased, women's anger levels also increased (Polat & Karasu, 2022). Consistent with H2, MBST was associated with a significant reduction in anger levels, supporting this hypothesis. When the post-test mean scores of the DSM-V Level II Anger Scale were compared in the study, it was determined that it was significantly lower for the study group, and the effect size was large. It is known that self-compassion reduces individuals' judgmental and harsh attitudes towards themselves and helps them cope with negative emotions in a healthier way (Kurtoğlu & Başgöl, 2021). Meta-analysis studies supported the effects of self-compassion on depression, anxiety, and stress, and also presented that it improves emotional regulation skills (Han & Kim, 2023; MacBeth & Gumley, 2012; Salazar et al., 2023). An experimental study has provided evidence suggesting that self-compassion-based interventions may contribute to improved emotional regulation and stress management (Crego et al., 2022). The present study is one of the limited number of studies showing the effect of self-compassion practices on anger and emotional regulation in menopausal women, filling the literature gap in this area.

Most prior evidence on self-compassion-based approaches comes from studies of general body image or psychological symptoms such as stress, anxiety, and depression in younger or non-menopausal populations (Toole et al., 2021; Nightingale & Cassin, 2023), and from cross-sectional, correlational designs rather than randomized trials (Polat & Geçici, 2021; Özcan et al., 2022). These differences in population, design, and outcome measures limit direct comparability with the present findings and may partly explain why reported effect sizes vary across studies. By contrast, the present randomized controlled trial provides evidence specific to genital self-image and anger in menopausal women, a combination that largely correlational or population-general prior work has not directly tested.

Conclusion

This study found support for both study hypotheses: mindfulness-based self-compassion training was associated with a positive change in the genital self-image of menopausal women (H1) and a reduction in their anger levels (H2), addressing the knowledge gap identified in the Introduction regarding self-compassion-based interventions for anger and genital self-image in this population. Given the single-center design, relatively modest sample size, absence of follow-up assessment, and the methodological limitations noted above, these findings should be regarded as preliminary evidence supporting the potential effectiveness of MBST, rather than a basis for recommending its integration into routine clinical practice at this stage. Midwives and psychiatric nurses may consider self-compassion- and mindfulness-based approaches as a promising, low-risk component of psychological support for menopausal women, while confirmation through larger, multicenter randomized controlled trials with longer follow-up periods is warranted before broad clinical implementation can be recommended. It is recommended that future studies examine the long-term effects of self-compassion-based training in different age groups and cultural contexts, ideally testing the group $\times$ time intervention effect directly (e.g., using repeated-measures ANOVA or mixed-effects models). In addition, conducting comparative studies with other intervention methods aimed at increasing women's body perception and psychological well-being during menopause may contribute to a more comprehensive evaluation of the

subject. No adverse events or unintended effects associated with the intervention were reported by participants during the study period.

Challenges and Limitations of the Research

Some challenges and limitations encountered in the study have the potential to affect the generalizability of the results and the accuracy of the findings. First, the study was limited to only one Family Health Center (FHC) and was conducted with menopausal women in a single region. This may cause the findings to be limited to women in this region only and may limit their generalizability to different socioeconomic groups in other geographical regions. In addition, the study sample was limited to women who experienced natural menopause and were not receiving hormone replacement therapy. This excluded other types of menopause (such as surgical menopause) that may have different effects on the menopausal process and genital self-image, therefore the findings of this group of women may not be generalizable to women experiencing other types of menopause. These limitations may affect the generalizability of the results of the study. In future studies, conducting studies on menopausal women with different sociodemographic and cultural characteristics with larger samples may increase the generalizability of the findings. Additionally, investigating the durability of self-compassion-based interventions with longer follow-up periods would provide more information about the long-term effects of such interventions, thus increasing generalizability to different cultural groups with similar studies in the future. In addition to the generalizability issues above, several methodological limitations should be noted. First, the study was restricted to women who had experienced natural menopause within the last year, which may limit generalizability to women in later postmenopausal stages. Second, a formal allocation-concealment mechanism (e.g., sequentially numbered, sealed envelopes) was not used, and outcome assessment was not blinded, as the same research team delivered the intervention and collected outcome data; both factors could not fully exclude selection and detection bias. The statistical analysis was also conducted without blinding to group allocation. The trial's ClinicalTrials.gov record has been corrected accordingly to reflect this open-label, unblinded design. Third, no formal statistical adjustment for multiplicity was applied for the secondary outcome (Anger Scale), and these findings should be interpreted accordingly. Fourth, outcomes relied on self-reported measures and were assessed only immediately after the intervention, with no longer-term follow-up. Finally, because the study group participated in structured group sessions while the control group received no comparable attention or interaction, a potential attention/Hawthorne effect cannot be excluded as a contributor to the observed between-group differences.

Abbreviations

MBSCT

Mindfulness-Based Self-Compassion Training

FGSIS

Female Genital Self-Image Scale

WHO

The World Health Organization

FHC

Family Health Center

CONSORT

The Consolidated Standards of Reporting Trials

Declarations

Ethics approval and consent to participate

This study was conducted in accordance with the ethical principles stated in the Declaration of Helsinki and was approved by the Scientific Research and Publication Ethics Committee of Inonu University (Approval number: 2023/4613). Legal permission was also obtained from the institutions where the study was conducted. Prior to participation, all patients and their relatives received detailed explanations regarding the objectives, procedures, confidentiality principles, and voluntary nature of the study. All participants provided verbal written informed consent and were informed that they could withdraw from the study at any time without any consequences.

Consent for Publication

Not applicable.

Availability of Data and Materials

The data that support the findings of this study are available from the corresponding author, (Aysel AKBENİZ), upon reasonable request.

Competing Interests

The authors declare that they have no competing interests.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Authors' Contributions

ESB conceptualized the study, conducted the literature review, designed the research methodology, performed the data analysis, and drafted the initial manuscript.

AA provided methodological guidance throughout the study, critically reviewed the manuscript for scientific content, contributed intellectual revisions, and supported the development of the results and discussion sections.

Both authors read and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

Acknowledgments

The authors thanks to all patients who gave their time to participate in this research.

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Figures

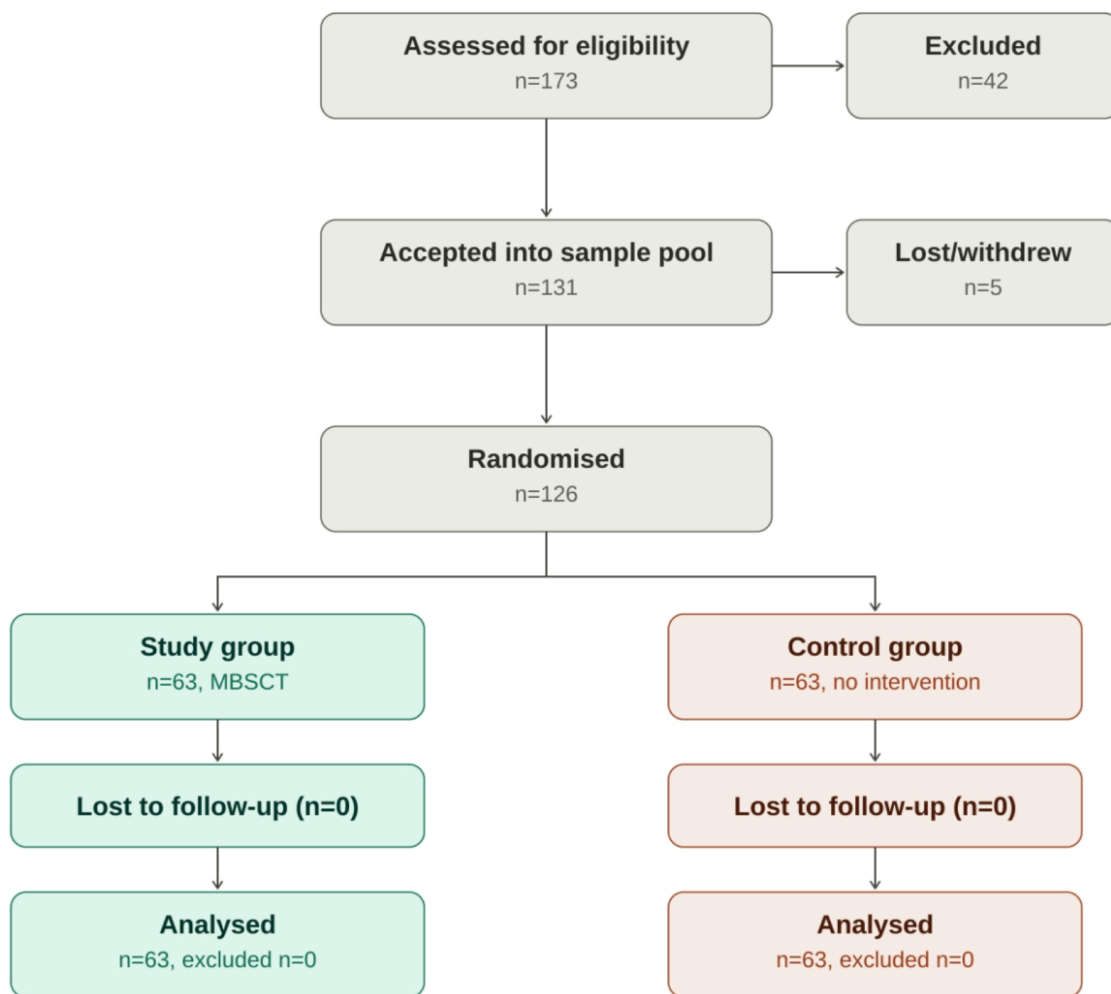


Figure 1

CONSORT diagram of the participants for each stage in this study

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