Emotional and health correlates of body dissatisfaction during the menopausal transition

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✦ ABSTRACT. Lo studio esamina i correlati psicologici ed emotivi dell'insoddisfazione per il proprio corpo in un campione di donne in menopausa. I risultati suggeriscono che alti livelli di insoddisfazione corporea si associano con problemi emotivi, una minore capacità di controllo delle espressioni di rabbia e una diminuzione della salute mentale. Inoltre, le donne esaminate durante il periodo di menopausa (perimenopausa) mostrano gli esiti più negativi, in termini di ansia, depressione e salute mentale, rispetto alle donne esaminate prima dell'inizio del periodo di menopausa o dopo la fine della transizione.

✦ SUMMARY. *The present study aimed at investigating the links between body dissatisfaction and other psychological variables pertaining to emotional life and mental health, as a function of menopausal status. To this purpose, we administered the Body Uneasiness Test (BUT), a self-report questionnaire specifically devoted to the examination of body image disorders, to a sample of pre-, peri-, or postmenopausal women aged between 45 and 55 years. In addition, mood states, feelings of anger and general health conditions were assessed with the Profile of Mood States (POMS), the State-Trait Anger Expression Inventory (STAXI) and the Short Form General Health Survey (SF-36), respectively. The results showed that high levels of body dissatisfaction were associated with increases in mood disorders and anger expression, as well as with decreases in mental health and the ability to control angry feelings. Moreover, the regression analyses indicated that these associations remained significant after controlling for age and menopausal status. Body dissatisfaction remained stable across the menopausal period; however, perimenopausal women reported higher scores of depression, fatigue, and anxiety in the POMS, were less able to control angry feelings in the STAXI and had significantly lower scores of physical and mental health in the SF-36, compared to either premenopausal or postmenopausal women. In summary, our results suggest that body dissatisfaction might constitute a significant risk factor for the mental health of midlife women experiencing the menopausal transition.*

Keywords: *Menopause, Body image, Body dissatisfaction, Mental health*

INTRODUCTION

In the last decades there has been a growing interest in investigating the consequences of menopause on women's body appearance and self-esteem (Gannon & Stevens, 1998). During the menopausal transition, most women experience substantial physical and hormonal changes that can have a negative impact on their body image perception and satisfaction (Deeks, 2004). Therefore, the present study had two primary aims. First, to determine whether body dissatisfaction was associated with psychological and health variables in midlife women aged 45-55 years. Second, to verify whether pre-, peri- and postmenopausal women differed in their psychological characteristics.

Regarding the first issue, an emerging body of research has begun to examine the psychological correlates of body dissatisfaction during the menopausal transition. Jackson et al. (2014), for example, reported data from the Study of Women's Health Across the Nation (SWAN) Chicago site, showing that women with high body image dissatisfaction or who perceived themselves as unattractive were more likely to report clinically significant levels of depressive symptoms. Similar findings have been obtained by Carrard et al. (2021), who found that body dissatisfaction, importance of appearance and aging anxiety were associated with higher depression scores in women aged 45-65. More generally, there is evidence indicating that body dissatisfaction is associated with numerous undesirable outcomes in midlife women, including high psychological distress, worsened life satisfaction, impaired psychosocial functioning, and lower mental and physical health (Becker, Verzijl, Kilpela, Wilfred & Stewart, 2019; Medeiros de Morais et al., 2017; Mond et al., 2013; Runfola et al., 2013).

With respect to the second issue, few quantitative studies have investigated whether pre-, peri- and postmenopausal women differ in their body image and the overall picture has been largely contradictory (McKinley & Lyon, 2008; Pearce, Thøgersen-Ntoumani & Duda, 2014; Quittkat, Hartmann, Düsing, Buhlmann & Vocks, 2019; Runfola et al., 2013; Tiggemann, 2004). On the one hand, Deeks and McCabe (2001) found that premenopausal women had higher ratings of appearance evaluation and nominated smaller silhouettes from the *Stunkard Body Shape Figure Scale* than women who were perimenopausal and postmenopausal, although these results became no longer significant when the confounding effects of age were considered. Significant differences have

been likewise reported by Séjourné, Got, Solans and Raynal (2019), who showed that body dissatisfaction was significantly higher in the perimenopausal group (compared with the premenopausal group), and by McLaren, Hardy and Kuh (2003), who concluded that postmenopausal women and women who started hormone replacement therapy felt more satisfied with their weight than did premenopausal women. On the other hand, a different line of research indicated that body image remained substantially stable during the menopausal transition (Koch, Mansfield, Thurau & Carey, 2005; Mangweth-Matzek et al., 2021). Koch and colleagues (2005), for example, showed that the self-perceived attractiveness of a sample of 307 women between 39 and 56 years did not significantly differ based on their menopausal status.

Controversial results have been also reported regarding the relations between menopausal status and emotional problems such as anxiety and depression (Kurpius, Nicpon & Maresh, 2001; Woods & Mitchell, 1997). Baker, Simpson and Dawson (1997), for instance, showed that perimenopausal women were more prone to experience feelings of anxiety than premenopausal women but argued that mood changes could be a by-product of sleep disruption. More recently, a longitudinal analysis of data from the multi-site Study of Women's Health Across the Nation (SWAN), including 3300 US participants, reported that women with low levels of anxiety at baseline were more likely to report high levels of anxiety symptoms when early or late perimenopausal or postmenopausal, compared to when they were premenopausal, independently of multiple risk factors (upsetting life events, poor perceived health, and vasomotor symptoms: Bromberger et al., 2019, Tang et al., 2019). Yet, a systematic review by Bryant, Judd and Hickey (2012) concluded that anxiety symptom levels were low throughout the menopausal transition and that none of the available studies provided solid data on the prevalence of anxiety disorders that met diagnostic criteria.

A similar picture emerged for depression (Vivian-Taylor & Hickey, 2014). Again, some authors claimed that there is no direct link between menopausal status and depression (e.g., Dennerstein, 1996; Kaufert, Gilbert & Tate, 1992). Specifically, a longitudinal analysis of data derived from the Massachusetts Women's Health Study, with 2565 women aged 45 to 55 years at baseline, showed that the onset of natural menopause was not associated with increased risk of depression, although experiencing a long perimenopausal period (at least 27 months) predicted higher levels of depression (Avis, Brambilla,

McKinlay & Vass, 1994). Other authors, however, reported that the rates of depressive disorders varied significantly across the different menopausal stages (Bromberger et al., 2001, 2007; Tang et al., 2019). Bromberger et al. (2007), for example, found that a woman was more likely to report high levels of depression (CES-D≥16) when she was early perimenopausal, postmenopausal or currently/formerly using hormone therapy (HT), relative to when she was premenopausal.

Considering this background, the present study aimed at investigating the links between body dissatisfaction and other psychological variables pertaining to emotional life and mental health, as a function of menopausal status. We focused on the following issues: a) were individual differences in body dissatisfaction associated with individual differences in mood disturbance, anger expression and general health (Simbar et al., 2020)?, b) was body dissatisfaction significantly related to mood disturbance, anger expression and general health, after removing the effects of age and menopausal status (Deeks & McCabe, 2001)?, and c) did premenopausal, perimenopausal and postmenopausal groups differ in terms of body dissatisfaction, mood disturbance, anger expression and general health (Séjourné et al., 2019)? To address these questions, we administered four self-report measures to a sample of Italian-speaking midlife women between 45 and 55 years. The questionnaires we used were the *Body Uneasiness Test* (*BUT*; a self-report questionnaire specifically devoted to the examination of body image disorders: Cuzzolaro, Vetrone, Marano & Garfinkel, 2006), the *Profile of Mood States* (*POMS*; McNair, Lorr & Droppleman, 1981), the *State-Trait Anger Expression Inventory* (*STAXI*; Spielberger, 1988) and the *Short Form General Health Survey* (*SF-36*; Ware, Snow, Kosinski & Gandek, 1993). Briefly, based on previous evidence, we expected body dissatisfaction to be positively associated with mood disturbance and anger expression (suggesting that women having higher levels of body dissatisfaction should report more negative moods and should be more likely to experience anger feelings, as compared to women having lower levels of body dissatisfaction), but negatively associated with general health (suggesting that women having higher levels of body dissatisfaction should report worse health conditions, as compared to women having lower levels of body dissatisfaction). In addition, these associations should remain significant after removing age differences. As for the differences between menopausal stages, we expected to find an increase in mood disturbance and anger expression, together with a decrease in general health conditions, in

the peri-menopausal group (as compared to the pre- and post-menopausal groups). However, we expected body dissatisfaction to remain substantially stable during the menopausal transition (after controlling for age effects: Koch et al., 2005; Mangweth-Matzek et al., 2021).

METHODS

Participants

172 women, with a mean age of 49.6 years (*SD* = 3.4; range: 45-55 years) and an average of 1.3 children (range: 0-4), were enrolled in the study. Most of them were married (*N* = 128); the remaining were divorced (*N* = 24), widowed (*N* = 5) or single (*N* = 15). Level of education was distributed as follows: 8 women had a primary-school license, 132 had a secondary-school license and 32 had a university degree. The menopausal status of participants was determined according to self-reports of menstrual bleeding patterns, following the Stages of Reproductive Aging Workshop (STRAW; Soules et al., 2001) and World Health Organization (WHO; Mangweth-Matzek et al., 2021) criteria. Specifically, 76 women were classified as premenopausal (i.e., having regular menses during the past 12 months; age: *M* = 47.5), 30 as perimenopausal (i.e., reporting the recent onset of amenorrhea or having irregular menses for at least 3 months but less than 12 months; age: *M* = 49.9) and 66 as postmenopausal (i.e., having no menstruation during the past 12 months; age: *M* = 51.9). All participants were recruited during periodical examinations at the Department of Obstetrics and Gynaecology of the San Giovanni Calibita Fatebenefratelli Hospital (Rome). After signing the informed consent, participants completed the entire survey in a unique session. The order of the questionnaires was counterbalanced across participants. Menopausal women who were using hormone replacement therapy at the time of testing were excluded from the study. All procedures and instruments were approved by the ethical committee of the San Giovanni Calibita Fatebenefratelli Hospital.

Material

– *Body Uneasiness Test* (*BUT*; Cuzzolaro et al., 2006). The BUT consists of 34 clinical statements assessing the following five independent factors: Weight phobia ("I'm

terrified of putting on weight"), Body image concerns ("I spend a lot of time thinking about some defects in my physical appearance"), Avoidance behaviors ("When I undress, I avoid looking at myself"), Compulsive self-monitoring ("I spend a lot of time in front of the mirror") and Depersonalization ("I feel detached from my body"). A Global Severity Index (GSI) measures the overall amount of body uneasiness. Participants responded on a 6-point scale (from "never" to "always"), indicating the extent to which each item fitted their actual experience. Higher scores indicate greater body dissatisfaction. In the present study, the internal consistencies of the five subscales, evaluated with Cronbach's alpha coefficients, were good, ranging from .60 to .81.

– *Profile of Mood States* (*POMS*; McNair et al., 1981; Italian version: Farnè, Sebellico, Gnugnoli & Corallo, 1991). The POMS assessment yields a profile of transient mood states, on the following six scales: Tension/Anxiety, Anger/Hostility, Depression/Dejection, Fatigue/Inertia, Confusion/Bewilderment and Vigor/Activity. Women rated 58 adjectives on a 5-point scale, indicating the extent to which each term described their mood states in the past week. Higher scores indicate more negative moods (except for the Vigor scale). A Total Mood Disturbance (TMD) was also computed, by adding all subscales and subtracting Vigor (Curran, Andrykowski & Studts, 1995). In the present study, the internal consistencies of the six subscales were good, ranging from .66 to .89.

– *State-Trait Anger Expression Inventory* (*STAXI*; Spielberger, 1988; Italian version: Comunian, 2004). The STAXI is a 44-item inventory which measures the intensity of anger as an emotional state at a particular time (State Anger: S-Anger) and the disposition to experience angry feelings over time as a personality trait (Trait Anger: T-Anger). Two additional subscales were used in the present study. The Anger-Control (AX/Con) scale assesses the tendency to control the expression of anger, whereas the Anger-Expression (AX/Ex) scales provides an overall measure of how often anger is being experienced and expressed. Participants responded on a 4-point scale (from "almost never" to "al-most always"), where higher scores indicated more frequent states of anger. In the present study, the internal consistencies of the four measures were good, ranging from .79 to .87.

– *Short Form General Health Survey* (*SF-36*; Ware et al., 1993; Italian version: Apolone & Mosconi, 1998). The SF-36 yields a profile of functional health and well-being, on the following eight scales: Physical functioning, Role limitations due to physical problems, Bodily pain, General health perceptions, Vitality, Social functioning, Role limitations due to emotional problems and Mental health. Scores range from 0 (lowest well-being) to 100 (highest well-being). Two summary measures were also computed: a physical component (the average of the Physical functioning, Bodily pain, Role limitations due to physical problems, and General health subscales) and a mental component (the average of the Mental health, Vitality, Role limitations due to emotional problems and Social functioning subscales). In the present study, the internal consistencies of the eight scales were good, ranging from .74 to .85.

Statistical analyses

Pearson's correlations were used to assess the bivariate associations between the BUT-GSI, the POMS-TMD, the STAXI scores and the physical and mental components of the SF-36. In addition, a series of hierarchical regressions were performed to determine whether body dissatisfaction predicted women's scores in the POMS, STAXI and SF-36 questionnaires, above and beyond the contributions due to menopausal status and age (Deeks & McCabe, 2001). Age and menopausal status (coded as two dummy variables) were always included in the first step to remove their potential effects, whereas body dissatisfaction was entered in the second step. Specifically, since menopausal status involved three groups (premenopausal, perimenopausal and postmenopausal women), two dummy coded variables were needed to fully represent all categories. Values in the first dummy variable were 1 if the woman belonged to the premenopausal group and 0 if she belonged to the perimenopausal or postmenopausal groups. Values in the second dummy variable were 1 if the woman belonged to the perimenopausal group and 0 if she belonged to the premenopausal or postmenopausal groups. Thus, the postmenopausal group was considered as the reference category in both cases.

Differences among premenopausal, perimenopausal, and postmenopausal women on each questionnaire were initially assessed by multivariate analyses of variance (MANOVAs), followed by univariate ANOVAs and post-

hoc comparisons (with Bonferroni adjustment; Séjourné et al., 2019). It should be noted that, in our conditions, non-parametrical statistics might have been more appropriate to examine group differences, since there were important differences in the number of premenopausal, perimenopausal and postmenopausal women recruited in the three groups. In these conditions, typical ANOVAs are known to have reduced statistical power and reduced robustness to unequal variances. To determine whether this was the case, we performed separate Kruskal-Wallis tests for each dependent variable illustrated in Table 1. The conclusions obtained with these analyses were highly comparable with those obtained with standard ANOVAs. We therefore decided to report only the results of parametrical analyses. This choice was also preferable because it allowed us to control for between-group differences in age, by entering this variable as a covariate.

These analyses were then replicated by including age as a covariate, since the three groups were not matched on this variable [$F_{(2, 169)}$ = 52.76, $p<.001$; pairwise post-hoc comparisons were all significant, indicating a linear increase in age from premenopausal to postmenopausal women: $p<.002$]. They were instead equivalent on education [$F_{(2, 169)}$ = 1.11, p = .33], marital status [married vs unmarried: χ^2 = 2.18, p = .33], and number of children [$F_{(2, 169)}$ = .72, p = .49]. Including age as a covariate allowed us to determine whether apparent differences between premenopausal, perimenopausal, and postmenopausal groups were explained or not by age (Deeks & McCabe, 2001).

RESULTS

Bivariate correlations

Table 1 reports Pearson's correlations between age, the BUT-GSI, the POMS-TMD, the four subscales of the STAXI and the physical and mental components of the SF-36. Two points should be noted. First, age was negatively associated with the BUT-GSI and the POMS-TMD, suggesting that body dissatisfaction and mood disturbances were lower in older than in younger women. Second, the BUT-GSI was positively associated with the POMS-TMD and the S-Anger, T-Anger, and AX/Ex subscales of the STAXI, but negatively associated with the AX/Con subscale of the STAXI and the mental component of the SF-36. Thus, women who were less satisfied with their bodies were more likely to exhibit high

levels of mood disturbance and to experience high levels of state and trait anger; in addition, they were less able to control the expression of anger and had lower levels of mental health.

Hierarchical regressions

The results of the hierarchical regression analyses are illustrated in Table 2. As can be noted, controlling for age differences, the role of body dissatisfaction was significant in all analyses, except for the SF-36 physical component. Moreover, menopausal status predicted state anger, anger control and the SF-36 mental and physical components. For state anger, data suggest that being premenopausal was associated with a significant increase in the tendency to experience anger as a transient emotional state (relative to being postmenopausal). For anger control, being perimenopausal was associated with a significant decrease in the ability to control the expression of anger. For the SF-36 mental component, being both premenopausal and perimenopausal was associated with a significant decrease in mental health. Lastly, for the SF-36 physical component, being perimenopausal was associated with a significant decrease in physical health. Interestingly, age had no significant effect on any variable, when considered together with menopausal group and body dissatisfaction.

Group differences

Table 3 illustrates the mean scores (and the corresponding standard deviations) achieved by premenopausal, perimenopausal and postmenopausal women in the four questionnaires.

BUT. The initial MANOVA revealed no significant multivariate difference between the three groups [Wilks' λ = .93, $F_{(10, 330)}$ = 1.31, p = .22, η^2 = .04]. The follow-up univariate analyses, however, found significant differences on the weight phobia [$F_{(2, 169)}$ = 4.10, p = .018, η^2 = .05] and body image concerns subscales [$F_{(2, 169)}$ = 3.77, p = .025, η^2 = .04], and marginal differences on the avoidance [$F_{(2, 169)}$ = 2.58, p = .079, η^2 = .03] and depersonalization subscales [$F_{(2, 169)}$ = 2.40, p = .094, η^2 = .02]. The post-hoc pairwise comparisons indicated that both weight phobia and body image concerns were higher for premenopausal than for post-menopausal women (p = .028 and p = .038, respectively). Notably, these univariate differences were eliminated when age was entered

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Table 1 – Pearson's correlations between all variables (N = 172)

Total sample	1	2	3	4	5	6	7	8	9
1. Age	1.00								
2. BUT-GSI	−.16*	1.00							
3. POMS-TMD	−.16*	.67*	1.00						
4. S-Anger	−.06	.24*	.39*	1.00					
5. T-Anger	−.03	.53*	.64*	.37*	1.00				
6. AX/Con	.06	−.31*	−.39*	−.28*	−.48*	1.00			
7. AX/Ex	−.10	.50*	.65*	.47*	.72*	.77*	1.00		
8. SF-36 Physical	−.07	−.07	−.10	.04	−.12	.04	−.06	1.00	
9. SF-36 Mental	.02	−.35**	−.49*	−.19*	−.40*	.33*	−.41*	.45*	1.00

Note. * $p \le .05$; ** $p < .01$

in the model as a covariate [$F_{(2, 168)} < 1.76$, $p > .17$, $\eta^2 < .02$], except for a marginal difference on the body image concerns subscale [$F_{(2, 168)} = 2.47$, $p = .087$, $\eta^2 = .03$; none of the post-hoc pairwise comparisons reached the significance level: all $p > .16$]. In line with these findings, when considering the overall GSI scores, group differences were significant before covarying for age [$F_{(2, 169)} = 3.29$, $p = .039$, $\eta^2 = .04$; GSI scores were marginally higher for premenopausal than post-menopausal women: $p = .081$], but were eliminated after entering this variable in the model [$F_{(2, 168)} = 1.58$, $p = .21$, $\eta^2 = .01$].

POMS. For the POMS questionnaire, the multivariate difference failed to reach the significance level [Wilks' $\lambda = .89$, $F_{(12, 328)} = 1.49$, $p = .12$, $\eta^2 = .05$]. However, the follow-up univariate analyses revealed significant group differences on the Tension/Anxiety [$F_{(2, 169)} = 5.54$, $p = .005$, $\eta^2 = .06$], Depression/Dejection [$F_{(2, 169)} = 4.41$, $p = .014$, $\eta^2 = .05$], and Fatigue/Inertia [$F_{(2, 169)} = 5.06$, $p = .007$, $\eta^2 = .06$] subscales. In addition, there was a marginal difference on the Anger/

Hostility subscale [$F_{(2, 169)} = 2.41$, $p = .093$, $\eta^2 = .03$]. In all cases, the pairwise comparisons indicated higher scores for perimenopausal than postmenopausal women (all $p < .05$). Unlike the BUT, all differences remained significant after covarying for age [for Tension/Anxiety: $F_{(2, 168)} = 3.95$, $p = .021$, $\eta^2 = .05$; for Depression/Dejection: $F_{(2, 168)} = 3.31$, $p = .039$, $\eta^2 = .04$; for Fatigue/Inertia: $F_{(2, 168)} = 3.48$, $p = .033$, $\eta^2 = .04$], except for the Anger/Hostility subscale [$F_{(2, 168)} = 1.22$, $p = .29$, $\eta^2 = .01$]. For the overall TMD scores, group differences were significant in the initial analysis [$F_{(2, 169)} = 4.43$, $p = .013$, $\eta^2 = .05$], but became marginal when covarying for age [$F_{(2, 168)} = 2.84$, $p = .061$, $\eta^2 = .03$]. The post-hoc comparisons confirmed that total mood disturbance was higher for perimenopausal than for postmenopausal women ($p = .057$).

STAXI. In the initial analysis, a significant multivariate difference was found among the three groups [Wilks' $\lambda = .90$, $F_{(8, 332)} = 2.18$, $p = .028$, $\eta^2 = .05$]. The follow-up univariate analyses revealed significant differences on the State-

Table 2 – Hierarchical regressions predicting women's scores in the POMS, STAXI and SF-36 questionnaires (N = 172)

Predicted measure		Predictors	β	t	R^2_{adj}	F change
POMS-TMD	Step 1	Age	−.06	−.79	.04	F = 3.49*
		Premenopausal group	.01	.17		
		Perimenopausal group	.11	1.60		
	Step 2	Body dissatisfaction	.64	11.07**	.44	F = 35.14**
S-Anger	Step 1	Age	.10	1.09	.02	F = 2.25†
		Premenopausal group	.23	2.24*		
		Perimenopausal group	.06	.64		
	Step 2	Body dissatisfaction	.22	2.91**	.06	F = 3.88**
T-Anger	Step 1	Age	.04	.48	.01	F = .67
		Premenopausal group	−.02	−.22		
		Perimenopausal group	.04	.51		
	Step 2	Body dissatisfaction	.53	7.88**	.26	F = 16.23**
AX/Con	Step 1	Age	−.03	−.33	.04	F = 3.49*
		Premenopausal group	−.09	−.98		
		Perimenopausal group	−.22	−2.70**		
	Step 2	Body dissatisfaction	−.28	−3.82**	.11	F = 6.48**
AX/Ex	Step 1	Age	.02	.24	.02	F = 2.23†
		Premenopausal group	.08	.90		
		Perimenopausal group	.12	1.54		
	Step 2	Body dissatisfaction	.48	7.08**	.24	F = 14.71**
SF-36-Mental	Step 1	Age	−.14	−1.51	.04	F = 3.43*
		Premenopausal group	−.19	−1.95*		
		Perimenopausal group	−.21	−2.61**		
	Step 2	Body dissatisfaction	−.33	−4.56**	.14	F = 8.08**
SF-36-Physical	Step 1	Age	−.05	−.49	.03	F = 2.98*
		Premenopausal group	.05	.44		
		Perimenopausal group	−.19	−2.17*		
	Step 2	Body dissatisfaction	−.06	−.81	.43	F = 2.39*

Note. † .06<*p*<.10; * *p*≤.05; ** *p*≤.01

Table 3 – Means and standard deviations for each questionnaire, as a function of menopausal status)

Measures	Menopausal status		
	Premenopause (N = 76)	Perimenopause (N = 30)	Postmenopause (N = 66)
BUT			
Weight phobia	1.30 (1.02)	1.49 (1.27)	.98 (.85)
Body image concerns	.94 (.93)	1.05 (1.04)	.74 (.66)
Avoidance behaviors	.39 (.67)	.55 (.90)	.28 (.41)
Compulsive self-monitoring	.85 (.63)	.74 (.79)	.76 (.58)
Depersonalization	.44 (.62)	.57 (.67)	.35 (.46)
POMS			
Tension/Anxiety	11.33 (6.75)	12.84 (7.84)	9.21 (5.78)
Anger/Hostility	10.35 (9.84)	12.60 (9.37)	8.40 (9.21)
Depression/Dejection	10.55 (11.59)	15.09 (11.66)	7.57 (9.64)
Fatigue/Inertia	8.24 (5.72)	10.42 (6.05)	6.51 (4.20)
Confusion/Bewilderment	7.59 (5.12)	8.91 (4.83)	7.05 (4.64)
Vigor/Activity	15.06 (6.29)	13.62 (5.35)	15.06 (6.26)
STAXI			
State-Anger	13.40 (5.67)	11.42 (5.36)	11.45 (2.77)
Trait-Anger	18.64 (5.60)	19.60 (6.68)	18.22 (5.11)
Anger-Control	22.60 (5.62)	19.62 (5.56)	24.05 (5.12)
Anger-Expression	23.63 (8.99)	26.00 (10.21)	20.91 (9.44)
SF-36			
Physical functioning	84.10 (16.60)	68.55 (23.31)	81.06 (17.64)
Role limitations (Physical)	67.51 (35.44)	59.55 (39.53)	61.74 (40.72)
Bodily pain	70.52 (23.35)	63.05 (22.73)	69.58 (23.53)
General health	61.42 (14.75)	57.04 (17.80)	61.14 (19.85)
Vitality	58.03 (19.60)	51.27 (19.44)	60.98 (19.71)
Social functioning	68.27 (24.40)	60.62 (22.38)	74.21 (20.22)
Role limitations (Emotional)	45.82 (39.92)	46.45 (38.78)	52.83 (40.07)
Mental health	64.67 (20.50)	56.07 (20.01)	66.06 (19.86)

Anger [$F_{(2, 169)} = 3.02$, $p = .051$, $\eta^2 = .04$], Anger-Control [$F_{(2, 169)} = 5.26$, $p = .006$, $\eta^2 = .06$], and Anger-Expression [$F_{(2, 169)} = 3.33$, $p = .038$, $\eta^2 = .04$] subscales. After entering age as a covariate, the differences on the State-Anger and Anger-Control subscales remained significant [$F_{(2, 168)} = 3.01$, $p = .052$, $\eta^2 = .04$ and $F_{(2, 168)} = 4.88$, $p = .009$, $\eta^2 = .05$], whereas differences on the Anger-Expression subscale became marginal [$F_{(2, 168)} = 2.48$, $p = .086$, $\eta^2 = .03$]. Pairwise comparisons indicated that: a) State-Anger was higher in premenopausal than in postmenopausal women ($p = .046$), and b) Anger-Control was lower in perimenopausal than in post-menopausal women ($p = .006$). For the Anger-Expression subscale [$F_{(2, 168)} = 2.48$, $p = .086$, $\eta^2 = .03$], scores were numerically higher in perimenopausal than in postmenopausal women ($p = .087$).

SF-36. In the initial analysis, a significant multivariate effect was found on the SF-36 questionnaire [Wilks' $\lambda = .69$, $F_{(16, 326)} = 4.12$, $p<.001$, $\eta^2 = .17$]. The follow-up univariate analyses confirmed significant differences between the three groups on the Physical functioning [$F_{(2, 169)} = 16.76$, $p<.001$, $\eta^2 = .16$], Social functioning [$F_{(2, 169)} = 9.19$, $p<.001$, $\eta^2 = .10$], and Mental health [$F_{(2, 169)} = 5.79$, $p = .004$, $\eta^2 = .06$] subscales. In addition, there was a marginal significance for the Vigor/Activity subscale [$F_{(2, 169)} = 2.77$, $p = .065$, $\eta^2 = .03$]. These results remained significant after covarying for age [for Phsysical functioning: $F_{(2, 168)} = 16.36$, $p<.001$, $\eta^2 = .16$; for Social functioning: $F_{(2, 168)} = 9.47$, $p<.001$, $\eta^2 = .10$; for Mental health: $F_{(2, 168)} = 5.79$, $p = .004$, $\eta^2 = .06$], with the exception of the Vigor/Activity subscale, for which differences fell below the significance level [$F_{(2, 168)} = 1.12$, $p = .32$, $\eta^2 = .01$]. The pairwise comparisons revealed that: a) physical functioning was significantly lower in perimenopausal than in premenopausal and postmenopausal women (both $p<.001$), b) social functioning was significantly lower in perimenopausal than in postmenopausal women ($p<.001$) and marginally lower in perimenopausal than in premenopausal women ($p = .053$), and c) mental health was significantly lower in perimenopausal than in postmenopausal women ($p = .002$). In addition, two univariate ANOVAs confirmed that the three groups were significantly different on both the physical and mental components of the SF-36 [$F_{(2, 168)} = 4.01$, $p = .020$, $\eta^2 = .05$ and $F_{(2, 168)} = 5.12$, $p = .007$, $\eta^2 = .06$]. For the physical component, the post-hoc comparisons indicated that the scores of perimenopausal women were significantly lower than those of premenopausal women ($p = .026$) and marginally lower than those of postmenopausal women

($p = .069$). Similarly, for the mental component, the scores of perimenopausal women were significantly lower than those of postmenopausal women ($p = .007$) and the scores of premenopausal women were marginally lower than those of postmenopausal women ($p = .080$).

CONCLUSIONS

The present study examined the psychological and health correlates of body dissatisfaction in a sample of 172 Italian women between 45 and 55 years of age – a period of life marked, for most women, by the transition from fertility to menopause. Several interesting results emerged. First, the correlational and regression analyses confirmed that, controlling for age and menopausal status, high levels of body dissatisfaction in midlife women predicted increases in mood disorders and anger expression, as well as decreases in mental health and the ability to control angry feelings. Such conclusions are well in line with similar results observed, among the others, by Ganem, de Heer and Morera (2009) and Simbar et al. (2020). Ganem and colleagues (2009) conducted a survey on 174 US university students ranging in age from 17 to 39 years and found that body dissatisfaction was a significant negative predictor of life satisfaction, self-esteem, depression and psychological well-being. Interestingly, with exception of the last variable, the body dissatisfaction by sex interactions were also significant, suggesting a stronger negative impact of body dissatisfaction on women (rather than on men). The more recent study by Simbar et al. (2020) focused specifically on midlife women experiencing the menopausal transition. Results showed that women who were more satisfied with their bodies were less likely to exhibit depression or anxiety problems, even after controlling for several potentially confounding variables (age, duration of menopause, occupation, housing situation and the adequacy of monthly household income). Thus, the common recommendation emerging from this field of research is that psychological interventions in midlife women should be specifically focused at improving acceptance of the physiological changes occurring to their bodies during the menopausal transition and promoting a correct, positive perception of self-body image (Simbar et al., 2020).

Second, our analyses showed that the overall levels of body dissatisfaction, as measured by the BUT-GSI, did not vary among pre-, peri- and postmenopausal women, after

eliminating age differences. As discussed above, the relation between body image and the menopausal transition is far from being clear, with different studies highlighting both negative and positive consequences (Pearce et al., 2014). Our data lean clearly towards the idea that body image remains fairly constant during the menopausal period and are therefore consistent with previous evidence reported, among the others, by Koch et al. (2005) and Mangweth-Matzek et al. (2021). In particular, the latter study demonstrated that premenopausal, perimenopausal, and postmenopausal women (classified with the same method adopted in the present study) reported similar levels of eating and body-image disorders. In contrast, menopausal symptomatology was robustly associated with shape and weight concerns, such that women suffering more severe symptoms were also more likely to be dissatisfied with their bodies. The authors concluded that menopausal stage may be less informative than menopausal symptoms as a predictor of eating and body image disorders. In this respect, our study was limited by the fact that we relied solely on the STRAW classification and did not evaluate menopausal symptomatology. On the other hand, a positive aspect is that we removed from our multivariate and univariate analyses the potentially confounding effects of aging – a procedure which has not been always applied in previous studies (e.g., Séjourné et al., 2019). By doing so, we showed that apparent differences in weight phobia and body image concerns fell below the significance level after controlling for age. The finding that the importance of body shape, weight and appearance decreased in older (postmenopausal) women, as compared to younger (premenopausal) women, was indeed expected (McLaren et al., 2003, Tiggemann, 2004) and could led researcher to incorrectly attribute group differences to menopausal stage, rather than to aging.

A third relevant finding was that, controlling for age, perimenopausal women: a) felt more depressed, fatigued and anxious in the POMS, b) were less able to control angry feelings and tended to express them more frequently in the STAXI, and c) had significantly lower scores of physical functioning, social functioning and mental health in the SF-36, compared to either premenopausal or postmenopausal women. These results corroborate previous findings obtained by other groups, showing that perimenopause represents a particularly difficult period for midlife women. Specifically, Avis et al. (1994) showed that experiencing a long period of perimenopause was associated with a greater risk of depression. Regarding health problems, Mishra, Brown and Dobson (2003) reported that women whose perimenopausal stage had lasted two years experienced larger declines in physical functioning than all other groups. As illustrated by Robinson (2001), at least three different hypotheses have been put forward to explain the increased occurrence of mood disorders in perimenopausal women (Woods & Mitchell, 1997). The first hypothesis assumes that depression would result from fluctuations in gonadal hormones levels leading to decreases in neural transmitters (Halbreich & Kahn, 2001). For the second hypothesis, mood disorders would be the consequence of concomitant increases in the frequency of vasomotor symptoms, such as night sweats and hot flashes (Kurpius et al., 2001); lastly, for the third hypothesis, depression in perimenopausal women would be linked to negative attitudes and expectations concerning menopause (Lyons, 2000; McKinley & Lyon, 2008). Furthermore, the role of stressful life events occurring during the menopausal years and the lack of social support cannot be ignored (Kaufert et al., 1992; Kurpius et al., 2001). The correlational nature of our study does not allow us to adjudicate between these explanations; however, the present findings converge with previous ones in suggesting that changes occurring during the perimenopausal period may be a source of heightened stress, as also demonstrated by increases in counseling referrals for psychological problems (Hamilton, Parry & Blumenthal, 1988).

Clearly, the present study has limitations that must be taken into account. First, the cross-sectional nature of our methodology did not allow us to conclude that body dissatisfaction was causally related to the emotional troubles exhibited by menopausal women. Second, the overall sample size was relatively low and the distribution of women across the three menopausal stage was uneven (i.e., perimenopausal women were underrepresented). Third, we did not measure several variables that are known to have a significant impact on women's mental health, such as appearance-related attitudes toward menopause and aging (e.g., McKinley & Lyon, 2008). Despite these limitations, our results suggest that body dissatisfaction might represent a prominent factor of emotional distress in midlife women, over and above the influence of age and menopausal stage. Additional longitudinal research will help us to further assess the nature of the relationship between body image and psychological wellbeing in women experiencing the menopausal transition.

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