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► **To cite this version:**

Natalène Séjourné, Fabrice Got, Catherine Solans, Patrick Raynal. Body image, satisfaction with sexual life, self-esteem and anxio-depressive symptoms: a comparative study between pre-menopausal, peri-menopausal and post-menopausal women. *Journal of Women and Aging*, 2018, 31 (1), pp.18-29. 10.1080/08952841.2018.1510247 . hal-03190633

HAL Id: hal-03190633

<https://hal.science/hal-03190633>

Submitted on 6 Apr 2021

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RUNNING TITLE: Body image and menopause

Body image, satisfaction with sexual life, self-esteem and anxio-depressive symptoms: a comparative study between pre-menopausal, peri-menopausal and post-menopausal women

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Abstract

Menopause is an important life transition in women and it is associated with significant physical and psychological changes. This study aimed at examining how the menopausal transition influences body image and satisfaction with sexual life. To this aim, body image dissatisfaction, sexual dissatisfaction and self-esteem were compared in three groups of women with distinct menopausal status (premenopausal n = 142, perimenopausal n= 66 or postmenopausal n= 149), while controlling for depressive and anxiety symptoms and BMI. Using ANOVA between these 3 groups, we observed that dissatisfaction with body image was significantly higher in the perimenopausal sample compared with its premenopausal counterpart. In the postmenopausal sample, body image improved, as this group displayed body image scores close to the premenopausal level. In addition, sexual dissatisfaction was significantly increased in the perimenopausal and postmenopausal samples, which is compatible with the concept that higher body appreciation positively predicted sexual function. We conclude that body image dissatisfaction reaches a maximum during the perimenopausal phase, before returning to a level nearly identical between the premenopausal and the postmenopausal phases.

Keywords

Menopausal transition; body image; sexual satisfaction

Introduction

Menopause, defined as the complete cessation of menstrual periods, is associated with the gradual loss of ovarian follicles occurring naturally in midlife women. It is estimated that 1.2 billion women worldwide will be menopausal or postmenopausal by the year 2030 (Monteleone, Mascagni, Giannini, Genazzani, & Simoncini, 2018; World Health Organization, 1996). Menopause is an important life transition in women and it is frequently associated with symptoms (hot flushes, night sweats, sexual dysfunctions etc.) as well as with significant physical and psychological changes (Monteleone et al., 2018; Sandilyan & Dening, 2011; Sussman et al., 2015). Similar to puberty and pregnancy, the menopausal transition is thus a milestone in a woman's life, with transformations that can have a profound effect on her body image. The changes in appearance and function that some women face, such as weight and shape change, sleep disruption through night sweats, and signs of ageing, such as changes in skin, hair and sexual function, can influence the way a woman feels about her body (Monteleone et al., 2018; Pearce, Thøgersen-Ntoumani, & Duda, 2014; World Health Organization, 1996). Meanwhile, a woman's attitudes towards the menopausal transition and her culture can change her experience of this transition (Freeman & Sherif, 2007). In a review article, Ayers et al. underlined that a majority of studies observed that women with more negative attitudes towards the menopause report more symptoms during this transition (Ayers, Forshaw, & Hunter, 2010). Moreover, studies reported increased mental issues, including depression, during the menopausal transition, even though controversy exists over whether the menopausal transition is a risk factor for the development of depression (Bromberger et al., 2007; Vivian-Taylor & Hickey, 2014).

Body image is a multifaceted construct encompassing one's body-related self-perceptions and self-attitudes, including thoughts, beliefs, feelings, and behaviours (Cash & Pruzinsky, 2004). Research on body image has largely focused on puberty and young adults, notably with questions related to social stereotypes and eating disorders. In contrast, fewer studies explored the evolution of body image and its potential consequences over the lifespan or during the menopause transition.

Yet, body image can significantly influence self-esteem and self-confidence (Grogan, 2016; Polivy, Herman, Trottier, & Sidhu, 2014). Moreover, in a sample of US midlife women (the SWAN cohort), those with increased body image dissatisfaction or who perceived themselves as “unattractive” had higher scores of depressive symptoms (Jackson et al., 2014). Therefore, taking into account the perceptions of a woman on her own body could be a key element for health care professionals when implementing support over this transition (Pearce et al., 2014).

Among the studies exploring the link between body image and menopausal transition, Pruis & Janowsky reported that younger and older women have similar body dissatisfaction, but younger women have a higher drive for thinness and experience more societal influence on their body image (Pruis & Janowsky, 2010). In addition, a study of 270 midlife women in UK identified a positive association between rating highly on body dissatisfaction scales and holding negative attitudes towards menopause (Rubinstein & Foster, 2013). Furthermore, a survey of Polish women showed that the more menopausal symptoms a woman experienced, the worse her body esteem was (Olchowska-Kotala, 2017). Nevertheless, in a recent review, Pearce et al. pointed to an equivocal relationship between body image and the menopausal transition. They emphasized that menopausal transition is complex and individual, and should not be examined as a simple positive or negative transition. They also identified a sense of confusion for women experiencing the menopausal transition, due to contradicting medical advice and societal expectations of body image (Pearce et al., 2014).

Our study aimed at examining whether the menopausal transition induces a negative impact on body image, self-esteem, and satisfaction with sexual life, considering that links have been established between a positive body image and sexual satisfaction in women (Afshari, Houshyar, Javadifar, Pourmotahari, & Jorfi, 2016; Pujols, Meston, & Seal, 2010; Satinsky, Reece, Dennis, Sanders, & Bardzell, 2012). To this aim, body image dissatisfaction, sexual dissatisfaction and self-esteem were compared in three groups of women with distinct menopausal status (premenopausal, perimenopausal or postmenopausal), while controlling for depressive and anxiety symptoms.

Materials and methods

Participants

Potential participants (women aged between 35 and 70) were contacted through different ways: internet forums, social network, university cafeteria, waiting rooms, hairdresser shops etc. They were provided with a link to the online version of the questionnaire or were given a hardcopy version. Informed consent was obtained from all participants before completing the study. Participants were provided with information regarding the aims of the study and were informed that answers to the questionnaires would remain confidential. No compensation was offered to participate in the study, following a standard procedure of the institution.

Measures

Personal information

Personal information was gathered, including age, weight, size, marital status, educational level and information about their menstrual cycle. Participants were also asked to indicate their weight and height, and BMI was calculated as weight divided by the square of height in cm.

Body image dissatisfaction

Concern about body shape was measured using the 16-item version of the Body Shape Questionnaire (Evans & Dolan, 1993) under its French version (Rousseau, Knotter, Barbe, Raich, & Chabrol, 2005). An example of item is: "Have you noticed the shape of other women and felt that your shape compared unfavourably?". Items are rated on a Likert scale (from 1=never to 6=always). A high total score suggests elevated body dissatisfaction and a score below 38 indicates that the person has no concern about her body shape.

Self-esteem

Self-esteem was measured using the French version of Rosenberg's Self-Esteem Scale (Vallieres & Vallerand, 1990). It contains 10 items (e.g., "On the whole, I am satisfied with

myself.”) rated from 1 (strongly disagree) to 4 (strongly agree). Items 3, 5, 8, 9 and 10 require inverse scoring. A high total score indicates an elevated level of self-esteem.

Sexual dissatisfaction

The Index of Sexual Satisfaction is a short scale designed to measure the degree of dissatisfaction in the sexual component of a dyadic relationship (Hudson, Harrison, & Crosscup, 1981). We used it under its French version (Comeau & Boisvert, 1985). It contains 25 items (e.g., "I feel that my partner enjoys our sex life"), some of which are worded negatively to partially offset the potential for response bias (e.g., "I feel that our sex is dirty and disgusting"). The responses are scored on a 5-point Likert scale (from 0=never or rarely to 4=most of the time or always). The items 1, 2, 3, 9, 10, 12, 16, 17, 19, 21, 22, and 23 were scored inversely. Higher scores indicate greater degrees of sexual discord.

Anxiety and depression symptoms

Anxiety and depressive symptoms were measured using the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) under its French version (Razavi, Delvaux, Farvacques, & Robaye, 1989). This questionnaire contains 14 items, half of them dedicated to measuring depressive symptoms (e.g., "I feel as if I am slowed down"), and the other half to anxiety (e.g., "I feel tense or wound up"). Items are rated on a 4-point Likert scale. For each of these two subscales, high total scores suggest stronger symptoms.

Menopausal status definitions

The menopausal status of participants was determined according to information they provided in the questionnaire, using the following definitions: "premenopausal", women having regular menses, i.e., those reporting to menstruate regularly throughout the past 12 months with no change in their normal pattern; "perimenopausal", women reporting the recent onset of amenorrhea or of menstrual irregularities lasting for at least 3 months but less than 12 months; "postmenopausal"

if they reported amenorrhea of natural onset (i.e., not attributable to medical interventions) for more than 12 months (Soules et al., 2001).

Statistical analyses

The statistical analyses were performed using IBM SPSS Statistics version 24.

Results

Sociodemographic characteristics and descriptive statistics

The sample was composed of 357 women who completed the questionnaire, including 142 premenopausal, 66 perimenopausal and 149 postmenopausal women. Sociodemographic characteristics are shown in Table 1 and they were compared between the three groups using ANOVA. The three groups differed on mean age, as expected considering the group definition. The education level of the postmenopausal group was significantly lower than the premenopausal group. In addition, the postmenopausal group showed a lower score of professional status (person having a job) compared with the two other groups, which is probably due to the fact that the postmenopausal sample include retired women. Other variables, including marital status and number of children, did not show statistically significant inter-group differences. Descriptive statistics are shown in Table 2 (left part). Considering the whole sample or the different groups, the mean scores for body image dissatisfaction are within the 38-51 range, which corresponds to mild concern with body image. Regarding sexual dissatisfaction, the mean scores of the whole sample or of the different groups are below 30. This is the threshold score above which sexual life is considered non satisfactory, which indicates that all samples report overall a satisfactory sexual life. The mean scores of depressive symptoms are well below the threshold score of 8, thereby indicating the absence of significant depressive symptoms in all samples. In contrast, the mean scores for anxiety are closer to 8, but none is higher than 8, suggesting the absence of significant anxiety issues. Regarding self-esteem, the whole sample or the groups are within the 31-34 range,

corresponding to a level of self-esteem that is neither low nor high. Regarding BMI, all samples are in the 18.5-25 range, which corresponds to a normal weight. Cronbach's alphas for the different scales are in the acceptable to excellent range.

Correlational analysis

A correlational analysis is displayed in Table 3. Body image dissatisfaction showed a moderate positive correlation with BMI and weak positive correlations with sexual dissatisfaction, anxiety and depressive symptoms. Not surprisingly, body image dissatisfaction showed a moderate negative correlation with self-esteem. In addition, sexual dissatisfaction showed weak or moderate positive correlations with BMI, anxiety and depressive symptoms. Furthermore, sexual dissatisfaction was weakly and negatively correlated with self-esteem.

Group comparison using ANOVA

The participants were distributed in the 3 following groups, according to their menopausal status (see Methods): premenopausal (i.e., nonmenopausal women), perimenopausal and postmenopausal. Group means were then compared using ANOVA and a Tukey post-hoc test. As shown in Table 2 (right part), body image dissatisfaction was significantly higher in the perimenopausal, but not in the postmenopausal group, when compared with the premenopausal group. In addition, both the perimenopausal and postmenopausal groups displayed an elevated level of sexual dissatisfaction when compared with the premenopausal group. A higher score of depressive symptoms was observed in the postmenopausal group than in the premenopausal group, the perimenopausal group having an intermediate level that was not statistically different from other groups. Cohen's *d* calculations showed that the effect sizes were in the medium range. Of note, the level of anxiety symptoms, self-esteem and BMI were not statistically different between groups.

Discussion

This study aimed at further exploring the links between menopausal transition and body image by comparing samples of premenopausal, perimenopausal and postmenopausal women. We observed that dissatisfaction with body image was significantly higher in the perimenopausal sample compared with its premenopausal counterpart. In addition, the level of body image esteem in the postmenopausal sample was close to the premenopausal level, even though there was no statistically significant difference of the scores of body image dissatisfaction between the postmenopausal and the perimenopausal samples.

This suggests that body image dissatisfaction reaches a maximum during the perimenopausal phase, before returning to a level nearly identical between the premenopausal and the postmenopausal phases. Interestingly, data from a study in Austria exploring eating disorders during the menopausal transition indicated that body image was at its lowest level in a sample of perimenopausal women, compared with pre- or postmenopausal samples (Mangweth-Matzek et al., 2013), which fully supports our findings. This suggests that the menopause transition occurs at a time when changes to the body are less consistent with a socially constructed ideal of beauty, and these changes appear to be more accepted once the menopausal transition has occurred rather than during the transition itself (Rubinstein & Foster, 2013).

Of note, the differences in body esteem we observed between groups were not accompanied with significant changes in self-esteem, despite a moderate negative correlation between body dissatisfaction and self-esteem (Table 3). This is in agreement with earlier reports showing that self-esteem was not different between premenopausal or postmenopausal women (Chedraui et al., 2010; Drobnjak, Atsiz, Ditzen, Tuschen-Caffier, & Ehlert, 2014).

Regarding depressive symptoms, our sample also appeared to be consistent with those described in the literature, considering that scores of depressive symptoms are usually higher in postmenopausal populations (Bromberger et al., 2007). However, although it was reported that midlife women with poor body image may be more likely to have clinically significant levels of

depressive symptoms (Jackson et al., 2014), our study does not seem to make a strong link between poor body image and higher depressive symptoms, considering that the group with the highest level of depressive symptoms, namely the postmenopausal group, displayed an intermediate level of body image dissatisfaction. In addition, the scores of depressive symptoms and body image dissatisfaction were only weakly correlated ($r = .19$).

Regarding our study validity, besides the fact that reliability analysis yielded high internal consistency for all scales used in this study (Table 2), our sample appeared quite comparable to similar samples described in the literature. For example, in our premenopausal group, the mean BSQ score was 37.44 ± 16.19 which is just below the threshold score of 38. This was also the case of other premenopausal women samples in Spain (74.88 ± 31.14) or in France (75.8 ± 29.5) with mean scores just below the threshold score of 80 of a different BSQ version (Raich et al., 1996; Rousseau et al., 2005). Regarding BMI values in our pre-, peri- and postmenopausal groups (23.29 ± 4.63 , 23.77 ± 3.98 and 24.71 ± 5.15 , respectively), they appeared to be close to BMI values reported in pre-, peri- and postmenopausal groups from Austria (22.9 ± 3.8 , 24.2 ± 5.1 and 24.4 ± 4.4 , respectively) (Mangweth-Matzek et al., 2013). Similarly, the mean age of our perimenopausal sample (49.9 ± 2.8) is close to the mean age at the date of the final menstrual period (52 ± 2.7) in the SWAN sample (Avis et al., 2017). The difference between these mean ages could be due, at least partly, to the fact that the mean age of the perimenopausal group cannot entirely coincide with the age at the date of the final menstruation period, considering the definition of this group (i.e., women reporting the onset of amenorrhea or of menstrual irregularities lasting for at least 3 months but less than 12 months). Indeed, women in this group may have not reached their final menstruation period. Therefore, it is not unexpected that the mean age of this group appears to be younger than a sample of women reporting their age at the date of the final menstruation period.

Earlier reports suggested that having a poor body image could be linked to sexual dissatisfaction or degraded sexual function in women (Afshari et al., 2016; Pujols et al., 2010; Satinsky et al., 2012). In our study, we observed that sexual dissatisfaction was significantly

increased in the perimenopausal and postmenopausal samples, confirming that sexual functions are declining during the menopausal transition (Avis et al., 2017). Most interestingly, although the dissatisfaction scores of body image and of sexual life were only weakly correlated ($r = .22$), both scores were significantly lower in the premenopausal group than in at least one group of women under menopausal transition, which is compatible with the concept that higher body appreciation positively predicted sexual function (Satinsky et al., 2012).

Limits

This study has limitations. First, this research did not include data on hormone levels, whereas a full description of the relationship between menopausal transition and body esteem should take hormonal levels into account. In addition, this study used a cross-sectional design which limits the ability to make causal inferences or a definitive time-course analysis from the results. Moreover, this study was based on a convenience sample and not on random sampling.

Conclusion

This study shows that the perimenopausal phase, a critical transition period, is associated with an increase in dissatisfaction with body image. Once the menopause has occurred, body esteem returns virtually to the premenopausal level, suggesting that changes associated with menopause are more accepted once the menopausal transition is completed rather than during the transition itself. This study thus shows the importance of exploring specifically the transitional period, considering that the image body is the most negative and that sexual satisfaction significantly decreases during the perimenopausal phase. Regarding clinical implications, this study emphasizes the importance of considering the perimenopausal phase as an at-risk period for women, and it is likely that most women would benefit from undertaking a personal or psychotherapeutic work to accept these changes. At least, an appropriate information during this phase about body changes and their consequences should lead to a more rapid acceptance of the changes.

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Table 1
Sociodemographic characteristics of the sample and group comparison by ANOVA

		Whole sample	Group			<i>F</i>	Significant comparisons
<i>Modality</i>		N=357	Premenop. n=142 39.8%	Perimenop. n=66 18.5%	Postmenop. n=149 41.7%		
Age	<i>Mean (SD)</i>	50.47 (8.38)	42.74 (5.04)	49.94 (2.8)	58.07 (5.05)	354.8*	Prem.<Perim.<Postm.
Marital status	<i>Mean (SD)</i>	1.77 (0.42)	1.8 (0.4)	1.8 (0.4)	1.73 (0.44)	0.43	
	Single	83 23.2%	29 20.4%	14 21.2%	40 26.8%		
	As a couple	274 76.8%	113 79.6%	52 78.8%	109 73.2%		
Number of children	<i>Mean (SD)</i>	1.94 (0.97)	1.83 (0.96)	2.11 (0.88)	1.97 (1)	1.83	
	None	31 9%	18 12.7%	2 3%	12 8%		
	1 or 2	237 67%	96 67.6%	44 66.7%	98 65.8%		
	3 or more	86 24%	28 19.7%	20 30.3%	39 26.2%		
Education level	<i>Mean (SD)</i>	2.85 (1.46)	3.2 (1.42)	2.8 (1.39)	2.55 (1.46)	7.68*	Postm.<Prem.
	High school or less	88 24.7%	25 17.6%	16 24.2%	47 31.5%		
	Undergrad. degree	138 38.7%	50 35.2%	27 40.9%	61 40.9%		
	Graduate or > deg.	131 36.7%	67 47.2%	23 34.9%	41 27.5%		
Professional status	<i>Mean (SD)</i>	0.77 (0.42)	0.89 (0.3)	0.89 (0.31)	0.61 (0.49)	21.73*	Postm.<Prem.,Perim.
	Having a job	274 76.8%	127 89.4%	57 86.4%	90 60.4%		
	Not having a job	83 23.2%	15 10.6%	9 13.6%	59 39.6%		

* $p < 0.05$

Table 2

Descriptive statistics of the whole sample and group comparisons using ANOVA and a post-hoc test.

	Sample	Range	Cron- bach's alpha	Group <i>M (SD)</i>			<i>F</i>	Significant comparisons	Cohen's <i>d</i>
	<i>N=357</i> <i>M (SD)</i>			Premenop. <i>n=142 (39%)</i>	Perimenop. <i>n=66 (18%)</i>	Postmenop. <i>n=149 (42%)</i>			
Body image dissatisf.	39.67 (17.7)	16-94	0.95	37.44 (16.19)	45.02 (20.09)	39.42 (17.58)	4.24*	Prem.<Perim.	0.42
Sexual dissatisfaction	24.74 (16.77)	0-93	0.93	20.11 (15.15)	27.67 (17.36)	28.7 (17.08)	8.88*	Prem.<Perim.,Postm.	0.46, 0.53
Anxiety	7.07 (3.37)	0-18	0.75	6.96 (2.97)	7.09 (3.7)	7.16 (3.58)	0.12		
Depressive symptoms	3.93 (2.94)	0-15	0.74	3.41 (2.67)	3.92 (3.2)	4.38 (3.02)	4.21*	Prem. < Postm.	0.34
Self-esteem	32.52 (5.45)	10-40	0.87	32.31 (5.93)	32.85 (5.3)	32.58 (5.05)	0.23		
B.M.I.	24.13 (4.78)	15.8-46.6	n.a.	23.29 (4.63)	23.77 (3.98)	24.71 (5.15)	2.46		

* $p < 0.05$; n.a.: not applicable

Table 3

Correlation between variables (N=357)

Variables	1	2	3	4	5
1 Body image dissatisfaction					
2 Sexual dissatisfaction	0.22*				
3 Anxiety	0.2*	0.18*			
4 Depressive symptoms	0.19*	0.3*	0.46*		
5 Self-esteem	-0.3*	-0.16*	-0.43*	-0.4*	
6 B.M.I.	0.46*	0.12*	0.04	0.16*	-0.06

* $p < 0.05$