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Methods used in cross-cultural comparisons
of somatic symptoms and their determinants

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Abstract

This paper is the third in a series of reviews of cross-cultural studies of symptoms at midlife. The goal of this review is to examine methods used previously in cross-cultural studies of menopause and women's health at midlife to (1) identify challenges in the measurement of somatic symptoms across cultures and (2) recommend questions and tools that can be used in future research. This review also aims to examine the determinants of somatic symptoms.

The review concludes that methods used for assessing somatic symptoms differ across studies. Somatic symptoms, particularly, aches, pain, and fatigue have a high prevalence. Statistically significant differences were seen in the prevalence of somatic symptoms across cultures. Based on the number of studies that demonstrated cross-cultural differences in symptom prevalence, we recommend that the following symptoms be included in future studies of symptoms at midlife: headaches, aches/pain, palpitations, dizziness, fatigue, breathing difficulties, numbness or tingling, and gastrointestinal difficulties. We also recommend that objective measures of physical function be administered when possible to supplement subjective self-evaluation.

Keywords:

Menopause, Cross-cultural, Methodology, Somatic symptoms

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1. Introduction

This is the third in a series of reviews of cross-cultural studies of menopausal symptoms. The purpose of this review is to examine methods used in cross-cultural comparisons of somatic symptoms among women at midlife and to examine the determinants of somatic complaints. The goal of this review is to make recommendations that will improve cross-cultural comparisons in the future.

Midlife is characterized by an increasing prevalence of somatic symptoms [1,2]; however, the frequencies of these symptoms vary across cultures [3-5], suggesting an influence of lifestyle and/or sociocultural expectations on symptom experience and report. Somatic symptoms is a broad category of complaints that can include headaches, low back pain, neck pain and stiffness, joint pain and stiffness, numbness, shortness of breath, and dizziness. Somatic symptoms can be described as any symptom or complaint that interferes with physical function [6].

These pain and non-pain symptoms may have physiological causation and/or may be associated with depression or anxiety [6-8]. For example, in a longitudinal study of aches and

joint pain in Melbourne, Australia, X-ray analyses confirmed the presence of osteoarthritis in some, but not all, of the women with joint pain. The risk for aches and joint stiffness increased with postmenopausal status, a higher body mass index (BMI), unemployment, and depressed mood [9].

Pain is a complex construct; therefore it may not be reflected in a single measure [10]. This is probably true for non-pain-related somatic symptoms as well. The following review considers how somatic symptoms have been assessed in cross-cultural surveys. Symptom determinants are also examined as part of our goal to improve future cross-cultural comparisons [11]. The review concludes with recommendations.

2. Methods

This review is limited to studies that compare somatic symptom frequencies across ethnic groups within or between countries. The studies themselves are described in more detail in the overview to this series of review papers [11].

Frequencies of somatic symptoms were compared to the extent possible. We reviewed the disparate lists of somatic symptoms published across the studies. The most frequently queried symptoms were collapsed into broader categories for comparisons. Determinants of somatic symptoms were then compared to the extent possible, limited by the different variables entered into multivariate analyses. Finally, this review ends with recommendations made to facilitate future cross-cultural research.

3. Results

3.1. Measures of symptom frequencies

Eight symptom checklists and scales, in various combinations, were used as the bases for the eight studies profiled here. Table 1 provides the full name for each study, and the overview [11] describes each study in more detail.

[Table 1 goes about here.]

The *Greene Climacteric Scale* [12] was used in the AJMWHs [13]. In addition to individual symptom reports, a somatic factor score was computed from the Greene Climacteric Scale. Table 1 shows the 9 somatic symptoms queried in the AJMWHs, and Table 2 includes 7 of these symptoms for comparison across cultures. Australian women were more likely to report muscle or joint pains, but Japanese women were more likely to report palpitations and dizziness. Somatic factor scores computed from the Greene Climacteric Scale did not differ between Australian (3.47) and Japanese (3.56) participants.

[Tables 2 goes about here.]

In addition to the symptom checklist, the *SF-36 scale* was used to provide composite scores for physical health [14]. Profiles generated by the SF-36 relevant to somatic symptoms include physical functioning (general activity level, ability to climb stairs, to walk different distances, and to carry out activities of daily living), physical role limitations, bodily pain, and general health. After controlling for confounding variables, Japanese women reported significantly higher scores in physical function, but Australian women scored significantly higher on vitality and general health.

The *Everyday Complaint List* [15,16] was the base for symptom lists used in DAMEs [4], HWHS [2,17], and SWAN [18]. The core list of 16 symptoms, first used in Massachusetts [19], Canada [20], and Japan [21], included headaches, backaches, and aches/stiffness in joints experienced over the past two weeks [15].

A list of 25 symptoms based on the *Everyday Complaint List* was used in DAMEs. Eight of the 10 somatic symptoms are shown in Table 2 where percentages reflect the number of women who said they had experienced the symptom, regardless of frequency. Women in Beirut were significantly more likely to report palpitations, breathing difficulties, gastrointestinal complaints and numbness, but significantly less likely to report joint aches/stiffness compared with women in other study sites [4].

The *Everyday Complaint List* was modified for use in the HWHS following the piloting of the survey to women of European, Japanese, Chinese, and mixed ancestry [2]. Participants were presented with a list of 30 symptoms. Table 1 shows the somatic symptoms, and Table 2 compares results between European- and Japanese-American women for 4 of the 6 symptoms. European-Americans were significantly more likely to report dizziness and fatigue compared to Japanese-Americans [17].

The *Everyday Complaint List* was also the base for the 10 item symptom list used in SWAN [18]. Three somatic symptoms are included in Table 2. Gold et al. [22] examined “stiff/sore” in a multivariate analysis to demonstrate that African American and Hispanic women were less likely to complain of feeling stiffness or soreness in joints, neck or shoulders compared to European-American women. Hispanic women were more likely to complain of heart pounding. The *SF-36* was also used in SWAN [23]. Results were compared for bodily pain, role-physical, and vitality, with Hispanics most likely to report all three categories of impairment in quality of life. This remained true for bodily pain after controlling for covariates in sociodemographic, health, lifestyle, and social circumstances models.

The *Midlife Women’s Symptom Index* [24] was used in the FMEG [25] to query the presence of 73 symptoms, at least 22 of which could be classified as somatic symptoms. Of

these, seven are included in Tables 1 and 2 for comparison purposes. European-American women reported the highest frequency of every symptom listed in Table 2 with the exception of numbness and tingling which was most frequently reported by African-American women.

The *Kupperman Menopausal Index* was used to develop a Menopause Symptom List (MSL) administered in the POAS [26]. The most prevalent symptom in the past month was “aches, joint pain, and stiffness,” reported by 75% of women during the late transition stage [27]. The prevalence of aches is shown in a bar graph in relation to menopausal stage, but not in relation to race/ethnicity, therefore somatic symptom frequencies could not be included in Table 2.

In addition to the MSL, a *Daily Symptom Rating* (DSR) form included the following somatic symptoms: fatigue or lack of energy; headache; aches, joint pain, stiffness; insomnia; dizziness; poor coordination; breast tenderness; swelling, bloating, weight gain. The DSR was completed each day for one menstrual cycle. DSR scores were calculated by summing item ratings for follicular days (6–12) and late luteal days (23–28) [28]. Factor analyses were used to group swelling and weight gain, appetite changes, breast tenderness, aches, and headaches into Factor 2 (somatic symptoms). In addition, the *SF-12 Health Survey* was used to evaluate physical health. African American women reported higher Factor 2 somatic scores (31.0 vs. 29.0), and lower SF-12 (physical health) scores (48.4 vs. 52.4) [28].

The WHiMNS compared 16 symptoms across three groups of women living in Israel [29]. Ten somatic symptoms are shown in Table 1, of which 6 are included in Table 2 for comparison. Soviet immigrants to Israel reported the highest frequency of fatigue and breathing difficulties. Arab Israelis reported the highest frequency of headaches.

The WISHeS study used the *Menopause-Specific Quality of Life Questionnaire* [3]. This self-administered instrument queried symptom experience in the previous month and the degree to which the symptoms were bothersome on a 7-point Likert scale. Symptoms scored 3 or higher were categorized as clinically meaningful. See Table 1 for the 13 somatic items included in the symptom list, of which 4 were included in Table 2 for cross-cultural comparisons. Women in the U.S. and U.K reported a higher prevalence of aches/pain and fatigue compared to women in France, Italy, and Germany.

3.2 Symptom lists and cross-cultural comparisons

Table 2 illustrates the ubiquity of somatic symptoms at midlife. Many of the somatic symptoms queried by individual surveys (Table 1) are not included in Table 2 because of limited comparability across studies; therefore somatic symptoms are even more common and varied than reflected in Table 2. Furthermore, fatigue and muscle/joint pain were the most frequently reported symptoms, not just among somatic symptoms, but even compared to vasomotor symptoms in the AJMWHs [13] and WISHeS [3]. The symptoms most likely to be reported as bothersome in the whole sample of WHiMNS were back/neck aches (63%) and headaches (48%). These frequencies exceeded the frequency for hot flashes (34%) [29]. In the HWHS the most often reported symptoms were aches and stiffness in joints (64%), backaches (51%), and lack of energy (48%). These also exceeded the frequencies reported for hot flashes (34%) [17].

The high rate of somatic symptoms across studies supports the need to include somatic symptoms in studies of midlife health. “Headaches” were queried by all studies, including POAS [30], although WISHES included headache with neck and shoulder aches. All studies also queried aches and pain (i.e., soreness or stiffness in muscles, joints, legs, neck and/or

shoulders). Six of the studies shown in Table 2 asked about fatigue. Less commonly addressed were palpitations, dizziness, breathing difficulties, and gastrointestinal complaints, followed by numbness or tingling.

As illustrated in Table 3, the highest number of significant differences between countries or ethnic groups was shown in DAMEs and FMEG. DAMEs compared women across very different countries (Morocco, Lebanon, Spain and the U.S.). Only the AJMWHs approached that degree of disparity in cross-country comparison. Although WiSHES compared the U.S. with European countries, the cross-country differences are probably not as great as across the DAMEs sites. FMEG was the only internet study. Another intra-U.S. study, HWHS, found fewer significant differences across ethnic groups. WHiMNS, also a comparison of ethnic groups within one country (Israel), was more similar in results to the HWHS (face-to-face interviews) than to the FMEG (internet survey).

[Table 3 goes about here]

3.3 Determinants of somatic symptoms across studies

The variables entered into multivariate analyses varied between studies and for different variables within studies (i.e., aches, joint pain and stiffness [27] and headaches [30]). In the HWHS, multivariate analyses have not been carried out for somatic symptoms [17]. The study of FMEG examined variation in the total number of symptoms, but not individual somatic symptoms [25]. In SWAN, factor analysis was used to cluster headaches with feeling tense, blue or depressed, irritable, and forgetfulness [18]. Although the cluster is of interest, it is impossible to know the determinants of headaches alone. Similarly, in Israel, factor analysis was used by WHiMNS investigators to create a general somatic symptoms scale from eye irritation, headaches, and dry skin [29]. The determinants for headaches alone cannot be determined.

In DAMEs, multivariate analyses were carried out only for a subset of symptoms, but demonstrated that country of residence remained a significant determinant of cardiovascular, joint pain, and fatigue symptoms [4]. In POAS [27], African American women were 1.31 times more likely to report aches, joint pain, and stiffness compared to white women in the multivariate model (95% CI 1.00-1.73). Ethnicity was not, however, a determinant of headache report [30]. WISHES is a wonderful example of examining all symptoms in multivariate models and presenting the results for easy comparison across symptoms. The prevalence of each symptom at age 50 is given for each symptom along with the significant determinants [3].

Table 4 shows the determinants of various measures of somatic symptom frequencies across 6 of the 8 studies reviewed. Looking across the studies, country or ethnicity, age (with the exception of DAMEs), and menopausal status were the variables consistently examined and consistently found to be significant determinants of somatic symptoms. BMI was not as consistently examined, but appears to be important in explaining the frequency of aches and pains.

[Table 4 goes about here.]

4. Discussion and recommendations

The breadth of the category of somatic symptoms resulted in an immediate challenge as we divided up symptoms for separate review. For example, palpitations and shortness of breath can interfere with physical function (and thereby meet our criteria for somatic symptoms [6]); however, a rapid heartbeat and shortness of breath may also indicate a stress response. We chose to include overlapping symptoms in both the psychological [31] and somatic reviews.

Another challenge is apparent in Table 1 because different words or phrases were used by symptom lists to describe similar somatic complaints. Perhaps it is not surprising that there is more variation across studies in the description of somatic symptoms than in descriptions of, for example, vasomotor symptoms at midlife. One hallmark of somatic symptoms is their vague character. Making symptom lists comparable within a cross-cultural study is most important and that seems to have been accomplished in each of these studies despite the need to translate concepts into other languages and across cultures.

For cross-study comparisons, differences in the presentation of results make it difficult to look for general trends. Composite factor scores (as in AMJWHS, POAS, and WHiMNS) are made up of different symptoms, therefore are limited in comparability. Headaches cluster with psychological symptoms in one study [18], but with somatic symptoms in another [29].

Sample recruitment and method of questionnaire administration affect our ability to compare. For example, in a four continent survey of women aged 40-70 carried out by Heinemann et al. [32], women in four European countries and in the U.S. were recruited from existing ACCESS panels, while in three Latin America countries and Indonesia, women were recruited from house to house interviewers. The same Menopausal Rating Scale was used to evaluate the prevalence and severity of menopausal complaints, but the difference in sample recruitment might limit comparability. In the comparison presented here, the internet survey [25] found significant differences across all symptom categories presented in Table 2. Another survey carried out in the U.S. that used face-to-face interviews [17] did not find the same number of significant differences. The internet survey, FMEG, included different ethnic groups in their analyses, but there may also have been some methodological bias.

While hot flashes are generally considered the hallmark symptom of menopause, a review of the literature shows that somatic symptoms are often more frequent complaints [21, 32]. The same is true in many, but not all [4], of the studies reviewed here. Despite their frequency, the presence of somatic symptoms is often minimized in studies of symptom frequencies at midlife because, for example, joint and muscular discomforts are not viewed as a symptom of menopause *per se* [32, 34].

In addition to the recommendations made in our overview [11], we recommend that, whatever the symptom list, headaches be included in a separate category (not combined with neck and shoulder aches) and that headaches be investigated in more detail to separate migraines from stress headaches [35]. This is because the experience migraines may change with the hormonal fluctuations of menopause [36]. Whether viewed as psychological or somatic complaints, we recommend that dizziness, chest pain, palpitations, breathing difficulties, and numbness be included on all lists. Although gastrointestinal discomforts was probably first included in the Everyday Complaint list [15] as a symptom used to distract attention away from the stereotypical menopausal symptoms, differences in the frequency of GI complaints across countries [4] and cultures [25] suggest that there is something to be learned about women's health at midlife through the inclusion of gastrointestinal complaints on questionnaires. As for the use of SF-36 and somatic symptom scores, these are valuable as subjective measures of function.

Objective measures avoid the problem of cultural reporting bias [37, 38] and provide an alternative source of information about symptom experience. A study in Taiwan [39] examined menopausal status in relation to flexibility, muscular strength, and balance, and found that flexibility did not vary, but peri- and post-menopausal women had weaker grip strengths and

compromised balance compared to pre-menopausal women. The Michigan Bone Health and Metabolism study also found reduced hand grip strength among postmenopausal women [40]. In contrast, a cohort study in the UK found that among 53-year-old women there was no association between menopausal status and balance, and after adjustment for current height, the decreasing grip strength from pre- to peri- to post-menopausal categories attenuated, with a small additional attenuation after adjustment for current weight and other covariates [41]. We recommend that flexibility be assessed by simple stand-and-reach and sit-and-reach tests, muscular strength be assessed by grip strength, and balance be assessed by one-legged standing with eyes open or closed [39].

In conclusion, we show here that methods used for assessing somatic symptoms differ across studies, and that these symptoms, particularly, aches, pain, and fatigue, have a high prevalence. The prevalence of somatic symptoms varies among cultures, even after controlling for a myriad of relevant factors. We recommend that the following symptoms be included in future studies of symptoms at midlife: headaches, aches/pain, palpitations, dizziness, fatigue, breathing difficulties, numbness or tingling, and gastrointestinal difficulties. We also recommend that objective measures be administered when possible to supplement subjective self-evaluation of physical function.

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Table 3: Significance of country/ethnic differences in relation to somatic symptoms by study

	AJMWHS [13,14]	DAMeS [4]	FMEG [25]	HWHS [17]	SWAN [22,23]	WHiMNS [29]	WISHES [3]
Headaches	NS	*	**	NS	NS	*	NS
Aches/pain	**	*	**	NS	*	NS	*
Palpitations	**	**	**		*		
Dizziness	**	**		*		NS	
Fatigue	NS	**	**	**		**	*
Breathing difficulties	NS	**	**			*	
Numbness or tingling		**	**				
Gastrointestinal		**	**			NS	NS
Somatic factor score	NS						
SF-36 physical functioning	**						
SF-36 general health	**						
SF-36 vitality	**				**		
SF-36 bodily pain	NS				**		
SF-36 role physical	NS				**		

*p<0.05, **p<0.01

NS = examined and not significant

Table 4: Factors significant in multivariate models of somatic symptoms

	AJMWHS [13,14]	DAMeS [4]	POAS [27,30]	SWAN [22]	WHiMNS [29]	WISHES [3]
Country or ethnic group	SF-36 ^a physical function, role physical, bodily pain, general health, vitality	Joint pains ^c Cardio-vascular ^c Fatigue ^c	Aches, joint pain, stiffness ^d Headache ^e	Stiff/sore ^f Heart pounding ^f	Somatic scale ^g	Fatigue ^h Aching in muscles and joints ^h
Age or Age ²	SF-36 ^a physical function, role physical, bodily pain, general health, vitality		Aches, joint pain, stiffness ^d	Stiff/sore ^f	Somatic scale ^g	Fatigue ^h Aching in muscles and joints ^h Headaches ^h
Menopause status or Early surgical menopause	Somatic factor score ^b SF-36 bodily pain ^b	Joint pains ^c	Aches, joint pain, stiffness ^d	Stiff/sore ^f Heart pounding ^f	Somatic scale ^g	Fatigue ^h Headaches ^h
BMI			Aches, joint pain, stiffness ^d	Stiff/sore ^f		Aching in muscles and joints ^h
Smoking		Fatigue ^c		Stiff/sore ^f Heart pounding ^f		
Physical activity		Fatigue ^c		Stiff/sore ^f Heart pounding ^f		
PMS			Headache ^e			
Education				Heart pounding ^f	Somatic scale ^g	
Employment status	SF-36 ^a physical function, role physical, bodily pain, general health, vitality	Fatigue ^c		NS		
Ability to pay for basics				Stiff/sore ^f Heart pounding ^f		
Mental or physical morbidity						Fatigue ^h GI complaints ^h Aching ^h Headaches ^h
Healthy lifestyle					Somatic scale ^g	
Perceived stress			Aches, joint pain, stiffness ^d Headache ^e			
Depressive symptoms			Aches, joint pain, stiffness ^d Headache ^e		Somatic scale ^g	
Estradiol variability			Aches, joint pain, stiffness ^d			

Variables entered into models

^a Age, marital status, education, employment status, income

^b Country of residence and menopause status

^c Country of residence, age, education level, employment status, smoking, exercise, menopausal status.

^d Menopausal status, age, race, history of depression, current smoking, BMI, perceived stress, estradiol variability

^e Menopausal status, PMS, perceived stress, history of depression, smoking, age, race, estradiol level

^f Age, education, employment status, ability to pay for basics, race/ethnicity, marital status, parity, menopausal status, BMI, smoking, physical activity

^g Cultural group, age, education, family status (married/other), menopausal status, healthy lifestyle (yes/no) ever use of HRT, chronic morbidity, BMI, level of depressive symptoms

^h Age, age², mental morbidity, physical morbidity, early surgical menopause, BMI, country (UK/US, FR/IT, GE)

Table 1: Measures of somatic symptoms in cross-cultural studies of women's health at midlife. (Symptom classification consistent with Table 2)

Studies	Instruments	Questions	Headaches	Aches/Pains	Palpitations	Dizziness	Fatigue	Breathing Difficulties	Numbness or tingling	Gastro-intestinal difficulties	Other (not in Table 2)
Australian/Japanese Midlife Women's Health Study (AJMWHS) [13,14]	Green Climacteric Scale	The extent to which you are bothered at the moment by the following symptoms	Headache	Muscle or joint pains	Heart beating quickly or strongly	Feeling dizzy or faint	Feeling tired or lacking in energy	Breathing difficulties	Part of body feeling numb or tingling		Pressure or tiredness in head/body; Loss of feeling in hands or feet;
Decision At Menopause Study (DAMeS) [4]	The Everyday Complaint Checklist	During the past month, have you experienced any of the following?	Headaches	Joint pains	Palpitations	Dizziness	Fatigue/weakness	Shortness of breath	Numbness	Gastrointestinal symptoms	Chest pressure/pain; Weight gain
Four Major Ethnic Groups (FMEG) [25]	The Midlife Women's Symptom Index	Presence and severity of symptoms during the past 6 months	Headache	Neck and skull aches	Heart racing		Exhaustion or fatigue	Difficulty breathing	Numbness or tingling	Loose bowel movement	
Hilo Women's Health Survey (HWHS) [17]	The Everyday Complaint List	Over the past 2 weeks, have you ever been bothered by any of the following symptoms	Headaches	Aches/stiffness in joints		Dizzy spells	Lack of energy				Backaches; Leg cramps
Penn Ovarian Aging Study (POAS) [26-28,30]	The Kupperman Complaint Checklist	Whether each symptom occurred in the past month, the	Headaches	Aches, joint pain, and stiffness							

		frequency and severity (0-3) .									
Study of Women's Health Across the Nation (SWAN) [18,22,23]	The Everyday Complaint Checklist (modified version)	How frequently experienced each of 4 symptoms in the previous 2 weeks.	Headaches	Stiffness or soreness in joints, neck or shoulders	Heart pounding or racing						
The Women's Health at Midlife National Study (WHIMS) [29]	Illness Perception Questionnaire and a Menopause Specific Quality of Life	How bothered on a 4 point scale in the last 6 months	Headaches	Aches In back/neck		Dizziness	Fatigue/weakness	Shortness of breath		Abdominal pain	Eye irritation; Heartburn; Weight gain/loss; Chest pain at effort;
Women's International Study of Health and Sexuality (WISHeS)[3]	Menopause-Specific Quality of Life	Whether they had experienced the symptom in the previous month on a 7 points scale	Aches in neck, head, or shoulders	Aching in muscles and joints			Feeling tired or worn out				Flatulence or gas pain; Breast pain or tenderness; Feeling bloated; Low backache; Decrease in physical strength; Lack of energy; Weight gain; Increased facial hair; Decrease in stamina; Dry skin;

Table 2: Bivariate comparisons within cross-cultural studies of somatic symptoms.

	AJMWHs [13]		DAMeS [4]				FMEG [25]				HWHS [17]		SWAN [18]				WHiMNS [29]			WISHES [3]		
	Ages 45-60 Current symptoms		Ages 45-55 Symptoms in past four weeks				Ages 40-60 Symptoms in past 6 months				Ages 40-60 Symptoms in past two weeks		Ages 40-55, Longitudinal Symptoms in past two weeks				Ages 45-64 Bothersome symptoms in past 6 months			Ages 20-70 Symptoms in past month. Prevalence at age 50.		
	Australians N=863 ^a	Japan N=830	Beirut N=301	Rabat N=299	Madrid N=300	Mass N=293	European Am N=160	Hispanic N=120	African-Am N=121	Asian-Am N=111	Euro-Am N=203	Japanese-Am N=249	African Am N=4163	Hispanic N=1859	Chinese N=625	Japanese N=811	Jewish N=540	Soviet immigrant N=151	Arab Israelis N=123	US, UK Eur. n=2050, n=2467	France, Italy	Germany
Headaches	54	56	52*	57	47	58	33**	30	17	13	46	44	44	53	39	38	45*	53	58	40	40	40
Aches/pain	78**	72	44*	54	56	54	63**	60	47	45	64	65	56	48	48	50	62	71	64	41 ^b +11	41 ^b -7	41 ^b -8
Palpitations	35**	42	47**	34	29	29	27**	25	18	29												
Dizziness	25**	42	38**	37	25	24					14*	8					25	31	33			
Fatigue	82	85	79**	61	42	46	63**	58	58	32	51**	37					33**	41	12	44+8	44-9	44+1
Breathing difficulties ^c	25	28	40**	30	21	24	13**	13	4	13							11*	20	17			
Numbness or tingling	36	39	51**	28	40	22	37**	36	42	19												
Gastro-intestinal pain (Abd pain)			38**	17	27	24	29**	17	10	6							19	18	14	29	29	29

^aNumbers computed into yes/no frequencies from Anderson et al. [13]; significance is across 4 categories of not at all, a little, quite a bit, and extremely

^bSymptom prevalence at age 50 +/- the estimated increase or decrease in symptom prevalence due to country effect (Dennerstein et al. 2007)

* significant p<0.05 ** significant p<0.01