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Perceived Effects of Menopause Among Women Masters Swimmers

Michael Ussher, Chloe Mount, Sarah Greenberg, Christine Goodair, and Janette Perz

This study assessed female master swimmers' perceptions of the influence of menopause on their swimming. Using a cross-sectional design, 183 women completed an internet-based survey. Measures related to menopause status, physical activity levels, perceived effect of menopause on swimming, and attitudes to swimming and menopause. Perimenopausal women reported the least physical activity and the greatest reduction in intensity of swimming training due to menopause, relative to other menopause groups. A quarter of women reported that the intensity of their swimming had reduced due to menopause. In addition, a quarter reported that menopausal symptoms, particularly weight gain and sleeplessness, negatively affected their swimming. A third said that their confidence for competing at swimming had reduced due to menopause and that their swimming improved once menopause stopped. These findings suggest that menopause may have some detrimental effects on female master swimmers.

Menopause marks the end of women's menstruation and reproduction. Once a woman has not menstruated for 12 months retrospectively she is considered to have entered the postmenopausal period (Sherman, 2005). In the vast majority of women the menopausal transition is associated with vasomotor symptoms, such as hot flushes, as well as psychological symptoms, such as mood disturbance. Both types of symptoms may persist into the early stages of postmenopause (Hunter, 2007). Menopausal symptoms can cause discomfort, and these symptoms and other changes associated with menopause, may impact on social life, psychological health, and quality of life (Bachmann, 2005; Dennerstein, 1996). Menopause is also associated with an increased risk of developing cardiovascular disease and osteoporosis (Garnero, Sornay-Rendu, Chapuy, & Delmas, 1996; Rosano, Vitale, Marazzi, & Volterrani, 2007).

Previous research has examined the influence of physical activity on menopausal symptoms. For example, engaging in regular physical activity has been associated with a reduction in menopausal symptoms (Daley, MacArthur et al., 2007; Daley, Stokes-Lampard, & MacArthur, 2007; Lee & Kim, 2008). Physical activity has also been shown to be beneficial for "midlife" women for general

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health, including reducing osteoporosis and cardiovascular risk (Asikainen, Kukkonen-Harjula, & Miilunpalo, 2004). A literature search did not reveal any studies examining the impact of menopause on involvement in sports or other physical activities, however. Anecdotal reports from competitive master swimmers suggest that the menopausal transition may produce negative effects on women's swimming, their attitudes toward swimming, and their levels of participation.

Master athletes take part in sports events designed specifically for middle-age and older adults. Masters competitions are growing around the world, with over 50 countries sponsoring Masters events. There are public health implications as Masters sport encourages adults to maintain healthy levels of physical activity. The age at which one becomes a Masters athlete varies by sport. Masters swimming caters to swimmers who are aged 25 and older, competing in five-year intervals with the largest numbers tending to be in the age ranges 40–59. In the UK, there are around 7000 registered Masters swimmers, with approximately 40% females (Amateur Swimming Association, 2007). It encompasses a wide range of abilities, from serious international competitors to those swimming purely for leisure. In this study, we conducted an internet-based cross-sectional study to assess female Masters swimmers' perceptions of the influence of menopause on their swimming.

Method

Participants and Recruitment

Eligible women were aged 25 years and older and were registered with their national Masters swimming organization. A promotional flyer inviting women to complete an internet-based questionnaire was distributed at Masters swimming competitions in the UK. Following this, 107 swimmers who expressed interest in taking part were e-mailed the internet link to the survey. In the UK, invitations to participate were also placed in swimming magazines and were sent to 50 regional associations and clubs. Swimmers in English speaking nations with high levels of Masters swimming were also targeted. Consequently, e-mails were sent to 58 regional associations and clubs in Australia and 130 in Canada. In addition, a link to the survey was posted on Masters swimming websites and e-mail discussion lists in Canada, the USA, Australia and New Zealand. The women completed the questionnaire anonymously.

Pilot Focus Group

To identify appropriate issues to address in the online questionnaire a pilot focus group was conducted. This group also piloted a measure assessing the impact of menopausal symptoms on swimming, adapted from Perz (1997). Five women, all competitive Masters swimmers, with an average age of 56 years, participated in the focus group. Four identified themselves as postmenopausal and one as perimenopausal (i.e., changing menstrual patterns). For 90 min, the group discussed the question of "How has menopause affected your swimming and other physical activities, and what are your thoughts on this?" The discussion was audio recorded and a transcript was produced. A thematic analysis (Pope, Ziebland, & Mays, 2000) revealed

four main themes: (a) physical symptoms and their effect on swimming; (b) psychological symptoms and their effect on swimming; (c) other psychological implications of menopause for swimming (e.g., confidence for and enjoyment of swimming) and (d) general effects of menopause on swimming (e.g., overall effects and effects on intensity of training). A questionnaire was piloted and posted on the internet, including items corresponding to each of the themes raised in the focus group.

Measures

Demographics information was gathered (Table 1). To assess levels of participation in physical activity respondents were asked, "How many hours a week do you spend swimming?" and "How many hours a week do you spend doing physical activity other than swimming? (only include activity that gets you breathing heavier than normal and that lasts at least 10 min)." Menopausal status was self-reported using a measure adapted from Perz (1998), which is consistent with the STRAW staging criteria for menopausal status (Soules, Sherman, Parrott, Rebar, Santoro, Utian, & Woods, 2001). Women chose which of four labels best described their menopausal stage (see Table 2). Adapting an existing measure (Perz, 1997), participants were also asked to rate how they felt that 25 menopausal symptoms (13 physical, 12 psychological) had negatively affected their swimming in the last three months (i.e., no symptoms experienced, not affected, slight effect, moderate effect, strong effect, or extremely strong effect, see Table 3). Also using the latter scale, they gave a global rating of whether they felt menopause symptoms had negatively affected their swimming. Finally, the women reported their attitudes toward swimming and menopause. "In response to menopausal symptoms is the intensity of your swimming training *much less intense, less intense, about the same, more intense, much more intense, or not applicable?*" "If your menopausal symptoms have stopped, did your swimming performance improve once the symptoms stopped? (i.e., *Yes/No/not applicable*)" "Has your experience of the menopause affected your confidence for competing at swimming (i.e., *no confidence at all, very much less confident, somewhat less confident, slightly less confident, not at all affected my confidence, not applicable*)" and "Since the symptoms of the menopause do you enjoy swimming *much less, less, about the same, more, much more, or not applicable?*"

Data Analysis

Associations and differences between menopause status and demographics and attitudes to swimming were assessed using analysis of variance (ANOVA) and chi-squared tests. SPSS version 15 software was used and the level of significance for all tests was $p < .05$.

Results

Eligible women numbering 183 completed the survey over three months between January and March 2008. The demographics for the respondents are presented in Table 1. The vast majority of participants were employed in professional/managerial occupations, living in the UK, rated themselves as having *good* or *very good*

physical well-being and had given birth. They were highly active, with 84.6% (148/175) reporting doing a total of five hours or more of at least moderate intensity physical activity per week. A third (60/180) said that it was *very* or *extremely important* to them to be highly competitive at swimming and nearly half (44.2%, 76/172) reported having competed at swimming at least four times in the previous year. Nearly all the women (94% (172/183)) reported their menopausal status, with around a third considering themselves to be perimenopausal and a third postmenopausal (Table 2).

Table 1 Demographic Characteristics

Variable	Mean (SD)
Age (n = 183)	49.2 (8.6)
Years of full-time education (n = 179)	15.5 (4.3)
Reports of hours per week swimming (n = 177)	4.5 (2.3)
Reports of total hours physical activity per week (n = 175)	8.8 (3.8)
Reports of no. of swimming competitions in previous year (n = 172)	4.6 (5.9)
Months since last menstrual bleed, if in last 6 months (n = 88)	1.4 (1.1)
Years since last menstrual bleed, if greater than 6 months ago (n = 76; range = 0.6–25 years)	6.6 (5.5)
	Percentage (no.)
Employed	81.8 (148/181)
Professional/managerial occupation	59.6 (109/182)
Living in UK	67.2 (123/183)
Physical well being rated as 'good' or 'very good'	83.5 (152/182)
Used oral contraceptives or hormone replacement therapy	18.9 (34/180)
Induced menopause (e.g., hysterectomy)	15.3 (27/177)
Given birth	71.4 (130/182)
Menstrual bleeding in the last 6 months	53.3 (97/182)

Table 2 Subjective Menstrual Status

Menstrual Status	Percentage (no.)
Premenopausal—Have not experienced any changes in menstruation compared with what you usually experience	18.6 (32/172)
Perimenopausal: Have experienced changes in frequency, length or nature of bleeding (e.g., pain or heaviness) in your menstrual cycles	34.9 (60/172)
Menopausal—Have stopped having periods	11.6 (20/172)
Postmenopausal—Have not experienced a period for 12 months or more	34.9 (60/172)

Menopausal status was significantly associated with reports of physical activity (ANOVA, $F = 3.8$, $p = .011$), with those who were menopausal tending to report the highest levels of physical activity and those who were perimenopausal reporting the lowest: mean (SD) hours per week of activity: premenopausal = 9.2 (3.6), peri-menopausal = 7.9 (3.0), menopausal = 11.3 (4.6), postmenopausal = 8.8 (4.2). There were no significant differences in the menopausal groups according to education, hours of swimming, number of swimming competitions, professional/managerial status, or ratings of physical well-being. A quarter of respondents (24%, 44/176) reported that they felt that their menopausal symptoms had a *moderate*, *strong*, or *extremely strong* negative effect on their swimming; however, when considering 25 specific symptoms, only weight gain and sleeplessness were rated as affecting their swimming at a *moderate*, *strong*, or *extremely strong* level by at least a quarter of the women (see Table 3). There was no consistent pattern among these reports according to menopausal status.

Around a quarter of the respondents said they felt that the intensity of their swimming training had been reduced due to menopause and these reports were significantly associated with menopause status (Chi-squared test, $c = 11.6$, $p = 0.003$), with those who were perimenopausal reporting the greatest reduction in intensity (see Table 4). Approximately one-third of respondents reported that their confidence for competing had reduced due to menopause and that their swimming performance improved once menopause symptoms stopped. There was tendency for menopause status to be associated with reports of confidence (Table 4), but this did not reach significance ($c = 4.4$, $p = 0.113$). A fifth of the women said that their enjoyment of swimming had been reduced by menopause, but this was not significantly associated with menopausal status (Table 4).

Discussion

This survey provides preliminary evidence that a substantial proportion of Masters swimmers feel that menopause has some detrimental effects on their swimming. Specifically, around a quarter of respondents said that they felt that menopausal symptoms negatively affected their swimming. Weight gain and sleeplessness were the most frequently reported symptoms. In addition, around a third of respondents felt that their confidence for competing had reduced as a result of menopause and that their swimming performance improved once the symptoms stopped. About a quarter felt that the intensity of their swimming had reduced due to the menopause. In addition, overall levels of physical activity and perceived intensity of swimming training was significantly lower in those who were perimenopausal, relative to the other menopausal status groups.

Limitations

The study was limited in that menopausal status was defined somewhat subjectively (Perz, 1997) and future studies should consider ways to define menopausal status more objectively, for example, through hormonal analyses. The study was specific to highly physically active Masters swimmers. Studies are needed which compare reports of menopausal symptoms across women who use different levels of physical activity participation. For example, the extent to which involvement in physical

Table 3 Reports of Individual Symptoms Affecting Swimming Performance Presented According to Perceived Menopause Status (Frequencies Are for Those Rating Either a “Moderate,” “Strong,” or “Extremely Strong” Effect).

Perceived Effect of Psychological Symptoms on Swimming Performance	Perceived Menopause Status					Total % (no.)
	Pre menopause % (no.)	Peri-menopause % (no.)	Menopause % (no.)	Post menopause % (no.)		
1. Worrying needlessly	11.5 (3/26)	21.1 (12/57)	6.7 (1/15)	10.9 (6/55)	17.3 (22/153)	
2. Depressed feelings	17.9 (5/28)	19.0 (11/58)	21.4 (3/14)	24.1 (13/54)	20.8 (32/154)	
3. Loss of sexual interest	11.5(3/26)	7.0 (4/57)	0/16	7.7 (4/52)	7.3 (11/151)	
4. Poor concentration	7.7 (2/26)	19.6 (11/56)	31.3 (5/16)	9.4 (5/53)	15.2 (23/151)	
5. Sleeplessness	14.8 (4/27)	37.9 (22/58)	47.1 (8/17)	23.2 (13/56)	29.7 (47/158)	
6. Moodiness	22.2 (6/27)	15.8 (9/57)	5.9 (1/17)	7.5 (4/53)	13.0 (20/154)	
7. Poor appetite	3.7 (1/27)	5.6 (3/54)	0	6.4 (3/47)	4.9 (7/143)	
8. Excitable	15.4 (4/26)	7.3 (4/55)	0/16	7.7 (4/52)	8.1 (12/149)	
9. Early morning awakenings	0/26	33.3 (20/60)	37.5 (6/16)	14.8 (8/54)	21.8 (34/156)	
10. Irritability	17.9 (5/28)	16.1 (9/56)	6.3 (1/16)	9.8 (5/51)	13.2 (20/151)	
11. Tense feelings	11.5 (3/26)	21.4 (12/56)	13.3 (2/15)	9.6 (5/52)	14.8 (22/149)	
12. Crying spells	7.7 (2/26)	7.1 (4/56)	6.7 (1/15)	8.0 (4/50)	7.5 (11/147)	

Table 3b Perceived Effect of Physical Symptoms

Perceived Effect of Physical Symptoms on Swimming Performance	Perceived Menopause Status					Total % (no.)
	Pre Menopause % (no.)	Peri-Menopause % (no.)	Menopause % (no.)	Post Menopause % (no.)		
1. Pressure or tightness in head or body	3.7 (1/27)	17.0 (9/53)	28.6 (4/14)	8.5 (4/47)		12.8 (18/141)
2. Loss of feeling in hands and feet	0 (0/26)	3.8 (2/52)	21.4 (3/14)	4.2 (2/48)		5.0 (7/140)
3. Palpitations	3.7 (1/27)	6.9 (4/58)	6.7 (1/15)	10.0 (5/50)		7.3 (11/150)
4. Cold hands and feet	3.7 (1/27)	3.5 (2/57)	18.8 (3/16)	7.8 (4/51)		6.6(10/151)
5. Constipation	3.8 (1/26)	1.8 (1/57)	6.3 (1/16)	10.0 (5/50)		5.4 (8/149)
6. Weight gain	22.2 (6/27)	36.8 (21/57)	18.8 (3/16)	22.2 (12/54)		27.3 (42/154)
7. Shortness of breath	23.1 (6/26)	21.8 (12/55)	20.0 (3/15)	16.7 (8/48)		20.1 (29/144)
8. Numbness and tingling	0/26	13.5 (7/52)	6.3 (1/16)	2.1 (1/48)		6.3 (9/142)
9. Hot flushes	0/26	14.0 (8/57)	29.4 (5/17)	5.7 (3/53)		10.5 (16/153)
10. Headaches	29.6 (8/27)	26.8 (15/56)	12.5 (2/16)	10.7 (6/56)		20.0 (31/155)
11. Dry eyes	3.8 (1/26)	0/54	0/16	0/51		0.7 (1/147)
12. Dyspareunia	0/26	1.9 (1/53)	0/16	4.2 (2/48)		2.1 (3/143)
13. Involuntary sweating	0/26	9.3 (5/54)	13.3 (2/15)	5.9 (3/51)		6.8 (10/146)

Table 4 Attitudes to Swimming According to Menopause Status

Variable	Peri-Menopausal Percentage (number)	Menopausal Percentage (number)	Post Menopausal Percentage (number)	Total Percentage (number)
Reported that swimming performance improved once menopausal symptoms stopped?: 'YES'	Not assessed	50 (1/2)	31.6 (6/19)	33.0 (7/21)
*Reported that in response to the menopause intensity of swimming training has become: 'much less intense' or 'less intense'	42.6 (20/47)	22.2 (4/18)	11.4 (5/39)	26.6 (29/109)
Reported due to the menopause they are: 'somewhat less confident', 'very much less confident' or 'no confidence at all' as regards competing at swimming	39.5 (15/38)	41.2 (7/17)	20.5 (9/44)	31.3 (31/99)
Reported that swimming is 'less enjoyable' or 'much less enjoyable' since menopausal symptoms	11.9 (7/59)	21.1 (4/19)	15.8 (9/57)	14.8 (20/135)

*Significant difference according to perceived menopause status at $P < 0.05$

activity influences menopausal symptoms needs to be investigated (Daley, Stokes-Lampard, & MacArthur, 2007). Those who are more active may have a different attitude toward menopause. For example, anecdotal reports from the current study suggest that many of the women welcomed menopause, as they felt that menstruation interfered with their swimming (Kishali, Imamoglu, Katkat, Atan, & Akyol, 2006).

In general, this study focused on the negative aspects of menopause and research is needed to explore potential positive influences of menopause on swimming. For example, Masters athletes could be asked whether menopause had in any way increased their confidence toward swimming participation, something that was not addressed in the current study. Finally, this study was restricted to women who are mostly of a higher socioeconomic status, who have access to the internet, and who live in the UK. Further studies are needed which assess the impact of menopause on swimming, and other physical activities, in lower socioeconomic groups and among a more international sample.

Implications

These findings have public health implications as participation in physical activity tends to decline with age (Stewart, 2005). As women reach midlife, they need to be encouraged to maintain healthy levels of physical activity (Asikainen et al., 2004). Participation in Masters sport is becoming an increasingly popular way of achieving the recommended levels of physical activity and declines in physical activity are less apparent in Masters athletes (Rosenbloom & Bahns, 2006).

The present findings suggest that the experience of menopause may present a challenge to women who take part in Masters swimming. Sports coaches and participants need to be made aware of this challenge. In particular, issues related to weight gain, sleep disturbance, reduced confidence, and reduced intensity of physical activity may need to be addressed. For example, strategies for boosting confidence and managing symptoms need to be devised for swimmers undergoing or preparing for the menopause transition.

Further studies, including longitudinal studies, are needed with larger samples to assess the relative impact of different aspects of menopause on sports participation and performance, across a range of sports and among competitive and more casual participants. Such studies should also more clearly differentiate general psychological and physical symptoms and those relating to aging from menopausal symptoms. In addition, cohort studies are needed to determine whether menopause results in reduced levels of physical activity, either on a temporary or a more permanent basis.

Conclusions

This is the first study to the authors' knowledge to examine the perceived effect of menopause on swimming. In summary, the present data indicates that women perceived that the menopausal transition had some detrimental effects on their swimming. It is possible that the impact of menopause contributes to decreased participation and also reduced the quality of life for Masters swimmers. Future studies need to explore this issue among different populations of Masters swimmers or other Masters athletes, and also across a range of other physical activities.

References

- Amateur Swimming Association (2007). A strategy for Masters Swimming, <http://209.20.80.25/vsite/vfile/page/fileurl/0,5157-1-1-122695-0-file,00.pdf>
- Asikainen, T.M., Kukkonen-Harjula, K., & Miilunpalo, S. (2004). Exercise for health for early postmenopausal women: A systematic review of randomised controlled trials. *Sports Medicine* (Auckland, N.Z.), 34(11), 753–778.
- Bachmann, G.A. (2005). Menopausal vasomotor symptoms: a review of causes, effects and evidence-based treatment options. *The Journal of Reproductive Medicine*, 50(3), 155–165.
- Daley, A., MacArthur, C., Stokes-Lampard, H., McManus, R., Wilson, S., & Mutrie, N. (2007). Exercise participation, body mass index, and health-related quality of life in women of menopausal age. *The British Journal of General Practice*, 57(535), 130–135.
- Daley, A.J., Stokes-Lampard, H., & MacArthur, C. (2007). ‘Feeling hot, hot, hot’: Is there a role for exercise in the management of vasomotor and other menopausal symptoms? *The Journal of Family Planning and Reproductive Health Care*, 33(3), 143–145.
- Dennerstein, L. (1996). Well-being, symptoms and the menopausal transition. *Maturitas*, 23(2), 147–157.
- Garnero, P., Sornay-Rendu, E., Chapuy, M., & Delmas, P.D. (1996). Increased bone turnover in late menopausal women is a major determinant of osteoporosis. *Journal of Bone and Mineral Research*, 11(3), 337–349.
- Hunter, M.S. (2007). Menopause and postmenopause. In S. Ayers, et al. (Eds.), *The Cambridge Handbook of Psychology Health and Medicine* (pp. 779–780). Cambridge: Cambridge University Press.
- Kishali, N.F., Imamoglu, O., Katkat, D., Atan, T., & Akyol, P. (2006). Effects of menstrual cycle on sports performance. *The International Journal of Neuroscience*, 116(12), 1549–1563.
- Lee, Y., & Kim, H. (2008). Relationships between menopausal symptoms, depression, and exercise in middle-aged women: A cross-sectional survey. *International Journal of Nursing Studies*, 45(12), 1816–1822.
- Perz, J.M. (1997). Development of the menopause symptom list: A factor analytic study of menopause associated symptoms. *Women & Health*, 25(1), 53–69.
- Perz, J.M. (1998). Psychological and social concomitants of the female menopause: Development of a model of the menopausal experience. PhD Thesis, University of Sydney, Sydney.
- Pope, C., Ziebland, S., & Mays, N. (2000). Qualitative research in health care: Analysing qualitative data. *British Medical Journal*, 320(7227), 114–116.
- Rosano, G.M., Vitale, C., Marazzi, G., & Volterrani, M. (2007). Menopause and cardiovascular disease: The evidence. *Climacteric*, 19S-24S.
- Rosenbloom, C., & Bahns, M. (2006). What can we learn about diet and physical activity from master athletes? *Holistic Nursing Practice*, 20(4), 161–166.
- Sherman, S. (2005). Defining the menopausal transition. *American Journal of Medicine*, 118 (Suppl 12B), 3-7.
- Soules, M.R., Sherman, S., Parrott, E., Rebar, R., Santoro, N., Utian, W., et al. (2001). Stages of reproductive aging workshop (STRAW). *Journal of Women's Health & Gender-Based Medicine*, 10(9), 843–848.
- Stewart, K.J. (2005). Physical Activity and Aging. *Annals of the New York Academy of Sciences*, 1055, 193–206.