

Menopausal Symptoms and Equestrian Participation: The Perceived Impact on Confidence, Motivation and Riding Behaviour

Sports Sciences for Health

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Supplementary Material

Closed-Ended Questions on Symptoms

Supplementary Table 1: Descriptive statistics and inferential statistics for the age of participants and each symptom reported

<i>PARTICIPANT DEMOGRAPHICS & SYMPTOMS</i>	<i>PAIN</i>		<i>BRAIN FOG</i>		<i>VMS</i>		<i>MEMORY LOSS</i>		<i>ANXIETY</i>		<i>DIFFICULTY SLEEPING</i>		<i>GENITO- URINARY</i>		<i>NO SYMPTOMS</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
34-39	13	(81.3 %) [0.1]	13	(81.3 %) [-0.2]	10	(62.5 %) [-0.5]	13	(81.3) [1.2]	9	(56.3 %) [-0.7]	12	(75 %) [0.0]	2	(12.5 %) [-1.7]	0	(0.0 %) [-0.5]
40-44	37	(74.0 %) [-1.1]	43	(86.0 %) [0.6]	26	(52.0 %) [-2.6]	34	(68 %) [0.0]	40	(80.0 %) [2.4]	34	(68.0 %) [-1.1]	19	(38.0 %) [0.9]	2	(4.0 %) [1.8]
45-49	88	(80.0 %) [0.1]	100	(90.9 %) [2.4]	65	(59.1 %) [-2.3]	82	(74.5 %) [1.7]	78	(70.9 %) [1.5]	85	(77.3 %) [0.7]	42	(38.2 %) [1.5]	0	(0.0 %) [-1.3]
50-54	152	(84.9 %) [2.0]	154	(86.0 %) [1.3]	124	(69.3 %) [0.3]	123	(68.7 %) [0.3]	123	(68.7 %) [1.3]	136	(76.0 %) [0.5]	59	(33.0 %) [0.2]	0	(0.0 %) [-1.8]
55-59	123	(78.3 %) [-0.5]	126	(80.3 %) [-1.1]	115	(73.2 %) [1.5]	102	(65.0 %) [-0.8]	91	(58.0 %) [-2.1]	121	(77.1 %) [0.8]	47	(29.9 %) [-0.7]	3	(1.9 %) [0.8]
60-64	62	(81.6 %) [0.4]	61	(80.3 %) [-0.7]	64	(84.2 %) [3.1]	48	(63.2 %) [-0.9]	44	(57.9 %) [-1.3]	57	(75.0 %) [0.1]	20	(26.3 %) [-1.2]	3	(3.9 %) [2.2]
65-69	11	(61.1 %) [-2.0]	10	(55.6 %) [-3.2]	13	(72.2 %) [0.3]	12	(66.7 %) [-0.1]	11	(61.1 %) [-0.3]	10	(55.6 %) [-1.9]	7	(38.9 %) [0.6]	0	(0.0 %) [-0.5]
70-74	3	(42.9 %) [-2.4]	2	(28.6 %) [-3.9]	3	(42.9 %) [-1.5]	1	(14.3 %) [-3.0]	1	(14.3 %) [-2.8]	3	(42.9 %) [-2.0]	2	(28.6 %) [-0.2]	0	(0.0 %) [-0.3]
$X^2_{(7)}$	14.14 ^a		32.00 ^a		23.73 ^a		14.18 ^a		21.32 ^a		9.45 ^a		7.44 ^a		11.75 ^a	
<i>P</i>	.050		< .001*		.002*		.047		.003*		.219		.397		.147	
CRAMÉR'S V	0.15		0.23		0.20		0.15		0.19		0.12		0.11		0.14	
TOTAL	489	(79.8%)	509	(83%)	420	(68.5%)	415	(67.7%)	397	(64.7%)	458	(74.7%)	198	(32.3%)	8	(1.3%)

^a Cells have expected counts less than 5.

Note. *n* = number of participants within that age category; % = percentage of participants within that age category who reported experiencing the symptom; AR = adjusted residual. Adjusted residuals greater than ± 1.96 indicate cells contributing significantly to the overall χ^2 statistic. The total baseline population across all categories was *N* = 613.

* Adjusted p-values calculated using the Benjamini-Hochberg (FDR) procedure. Following multiple-comparison corrections, only Brain Fog (*p* < .001), VMS (*p* = .002), and Anxiety (*p* = .003) remain statistically significant.

Supplementary Table 2. Spearman's rank correlation coefficients (r_s) between menopausal symptoms and reported physical decline

	<i>Pain</i>	<i>Brain fog</i>	<i>VMS</i>	<i>Memory loss</i>	<i>Anxiety</i>	<i>Difficulty sleeping</i>	<i>Genito-urinary</i>	<i>Decline in coordination</i>	<i>Decline in strength</i>	<i>Decline in balance</i>
<i>Pain</i>	—									
<i>Brain fog</i>	.22**	—								
<i>VMS</i>	.11**	.12**	—							
<i>Memory loss</i>	.19**	.21**	.13**	—						
<i>Anxiety</i>	.16**	.26**	.07	.32**	—					
<i>Difficulty sleeping</i>	.11**	.17**	.18**	.20**	.21**	—				
<i>Genito-urinary</i>	.10*	.14**	.06	.07	.10**	.04	—			
<i>Decline in coordination</i>	.11**	.20**	.08*	.22**	.18**	.12**	.13**	—		
<i>Decline in strength</i>	.20**	.19**	.05	.23**	.15**	.11**	.20**	.24**	—	
<i>Decline in balance</i>	.14**	.14**	.03	.17**	.16**	.11**	.01	.45**	.30**	—

Note. $N = 613$. r_s = Spearman's rank correlation coefficient. VMS = vasomotor symptoms. ** indicates $p < .01$ (2-tailed); * indicates $p < .05$ (2-tailed).

Supplementary Table 3. Spearman's rank correlation coefficients (r_s) between menopausal symptoms, riding participation, and confidence outcomes

	<i>Pain</i>	<i>Brain fog</i>	<i>VMS</i>	<i>Memory loss</i>	<i>Anxiety</i>	<i>Genito-urinary</i>	<i>Difficulty sleeping</i>	<i>Decline in coordination</i>	<i>Decline in strength</i>	<i>Decline in balance</i>
<i>Considered stopping riding</i>	.13**	.08*	-.07	.18**	.15**	.10*	.08*	.12**	.17**	.19**
<i>Considered stopping competing</i>	-.04	.03	-.05	.08*	.07	-.02	.06	-.02	.03	-.05
<i>Stopped competing</i>	.02	.03	-.05	.15**	.03	.04	.06	.01	.04	.05
<i>Not as confident</i>	.16**	.13**	.05	.14**	.16**	.03	.01	.05	.09*	.13**
<i>Not affected</i>	-.21**	-.14**	-.07	-.23**	-.21**	-.06	-.07	-.07	-.17**	-.15**

Note. $N = 613$. r_s = Spearman's rank correlation coefficient. VMS = vasomotor symptoms. ** indicates $p < .01$ (2-tailed); * indicates $p < .05$ (2-tailed).

Supplementary Table 4. Thematic analysis table showing the higher and lower order themes identified from the thematic analysis of female equestrians lived experience of menopause

Raw Data	Lower Order Themes	Higher Order Themes
Stopped competing Stopped riding Considering selling my horse	Withdrawal behaviours	Cognitive appraisal
Riding less Bought an old quiet pony Riding shorter distances Temporarily lost confidence but carried on Avoid hacking on busy roads	Altered riding habits	
No change Not affected It hasn't Has not had any impact Hasn't affected my riding at all Attitude hasn't changed Still hacking More confident than ever	Manageable challenge	
Aware of risks Aware of my own viability More risk-averse Make a risk assessment part of everyday life	Risk perception	
Lifeline to combat depression Great mental health benefit Riding helped my low moods It's my lifeline It's been my saviour	Mental wellbeing	Cognitive restructuring
Needed the escape Riding actually really helped The only thing that made me happy Riding has been helpful	Escapism behaviour	
My happy place Started jumping again I enjoy being around my horse Encourages me to ride even more Determined to keep going Feel the need to keep having lessons Made me more determined	Positive coping strategies	
Muscled through with protection Tired but keep going	Psychological resilience	
Less patient Would snap at my instructor Get very frustrated	Emotional dysregulation	Emotional responses
Only ride when in right frame of mind Not as confident	Emotional vulnerability	
Lack motivation Lost enthusiasm Procrastination Lack of desire Can't make the effort Sometimes too down to get No get up and go	Reduced goal-directed activity	
Developed fear and anxiety Anxiety heightened More fear of falling off Fear of failure, I never had before	Cognitive anxiety	
Don't have the energy Avoided if felt too washed out Lack of energy Harder to have energy to do anything Too tired to ride sometimes out of house Zero energy No able to ride as long So tired Not as athletic and fit	Reduced physical and mental energy	Physical functional decline
Pain Really sore Less flexible Not so much strength Aching knees		

Hips ached Discomfort Lost a lot of strength Don't ride as much due to muscle aches and fatigue Saddle soreness	Musculoskeletal decline	
Uncomfortable in the saddle Bladder issues Less comfortable in the saddle Prepared with pad when riding Transitions make me leak Extra period protection while riding Can't ride when on a period	Urogenital issues	
Find it hard to remember courses and dressage tests Struggle to remember tests and need a reader	Decline in cognitive processing	Cognitive functioning and distortions
So much weight on hated myself Gained a lot of weight Felt too heavy for my horse	Negative self-perception	