

**Adult attachment and mindfulness: examining
directionality, causality, and theoretical implications**

STEVENSON, Jodie, MILLINGS, Abigail, EMERSON, Lisa Marie, SIROIS, Fuschia and ROWE, Angela

Available from Sheffield Hallam University Research Archive (SHURA) at:

<https://shura.shu.ac.uk/27583/>

This document is the Accepted Version [AM]

Citation:

STEVENSON, Jodie, MILLINGS, Abigail, EMERSON, Lisa Marie, SIROIS, Fuschia and ROWE, Angela (2021). Adult attachment and mindfulness: examining directionality, causality, and theoretical implications. *Journal of Research in Personality*. [Article]

Copyright and re-use policy

See <http://shura.shu.ac.uk/information.html>

Table 1. Descriptive statistics and correlation matrix for all participants at Time point 1 (below diagonal, $N = 219$, $df = 217$) and participants who completed Time point 2 (above diagonal, $n = 84$, $df = 82$). Diagonal represents test-retest reliability Pearson's correlations between T1 and T2 within construct.

	Time 1		Time 2		1	2	3	4	5	6	7	8
	M	SD	M	SD								
1. ECR-R Anxiety	4.02	1.14	4.10	1.21	.84** [0.72, 0.96]	.15 [-0.06, 0.37]	-.60** [0.77, -0.42]	-.61** [0.78, -0.43]	.09 [-0.13, 0.31]	-.28* [-0.49, -0.07]	-.54** [-0.73, -0.36]	-.50** [-0.69, -0.31]
2. ECR-R Avoidance	3.60	0.96	3.70	0.96	.18** [0.04, 0.31]	.82** [0.69, 0.94]	-.42** [-0.62, -0.22]	-.33** [-0.54, -0.13]	-.03 [-0.25, 0.19]	-.54** [-0.73, -0.36]	-.23* [-0.45, -0.02]	-.16 [-0.38, 0.06]
3. FFMQ Total	71.90	11.22	73.89	13.40	-.56** [-0.67, -0.44]	-.33** [-0.45, -0.20]	.80** [0.66, 0.93]	.70** [0.55, 0.86]	.37** [0.17, 0.57]	.67** [0.51, 0.83]	.65** [0.48, 0.82]	.73** [0.58, 0.88]
4. FFMQ Act with awareness	15.18	3.67	15.23	4.14	-.37** [-0.49, -0.24]	-.29** [-0.42, -0.17]	.68** [0.58, 0.78]	.74** [0.59, 0.89]	.02 [-0.20, 0.24]	.34** [0.14, 0.55]	.44** [0.24, 0.64]	.39** [0.19, 0.59]
5. FFMQ Observe	13.30	3.33	13.58	3.92	-.01 [-0.15, 0.12]	.01 [-0.12, -0.15]	.36** [0.23, 0.48]	.07 [-0.06, 0.20]	.72** [0.57, 0.87]	.12 [-0.10, 0.33]	-.12 [-0.34, 0.10]	.25* [0.04, 0.46]
6. FFMQ Describe	15.54	4.17	15.86	4.33	-.29** [-0.41, -0.16]	-.42** [-0.54, -0.30]	.68** [0.58, 0.78]	.39** [0.27, 0.52]	.06 [-0.07, 0.19]	.66** [0.50, 0.83]	.28* [0.07, 0.49]	.35** [0.15, 0.56]
7. FFMQ Non-judging	13.46	3.87	13.76	4.81	-.47** [-0.59, -0.35]	-.17* [-0.30, -0.04]	.60** [0.50, 0.71]	.32** [0.20, 0.45]	-.13 [-0.26, 0.01]	.32** [0.19, 0.45]	.58** [0.40, 0.76]	.33** [0.12, 0.54]
8. FFMQ Non-reacting	14.43	3.98	15.46	4.11	-.46** [-0.58, -0.34]	-.06 [-0.19, 0.07]	.59** [0.49, 0.70]	.20** [0.07, 0.34]	.16* [0.03, 0.29]	.15* [0.01, 0.28]	.20** [0.07, 0.33]	.65** [0.48, 0.81]

* $p < .05$; ** $p < .01$

Table 2. Paired samples *t*-test examining the stability of measures over time ($n = 84$, $df = 83$)

Variable	Time-point 1		Time-point 2		<i>t</i>	<i>p</i>	Difference 95% CI
	M	SD	M	SD			
ECR-R Anxiety	4.03	1.19	4.10	1.21	-1.02	.312	[-0.22, 0.07]
ECR-R Avoidance	3.66	0.96	3.70	0.96	-0.59	.555	[-0.16, 0.09]
FFMQ Total	72.64	12.79	73.89	13.40	-1.35	.181	[-3.09, 0.59]
FFMQ Act with awareness	15.17	4.09	15.23	4.14	-0.18	.855	[-0.70, 0.59]
FFMQ Observe	13.74	3.39	13.58	3.92	0.51	.611	[-0.45, 0.76]
FFMQ Describe	15.19	4.14	15.86	4.33	-1.75	.083	[-1.42, 0.09]
FFMQ Non-judging	13.74	4.46	13.76	4.81	-0.05	.959	[-0.95, 0.90]
FFMQ Non-reacting	14.81	4.33	15.46	4.11	-1.69	.096	[-1.43, 0.12]

Table 3. Correlation matrix of ECR-R dimensions (T1) and FFMQ subscales (T2) for participants who completed Time point 2 ($n = 84$, $df = 82$).

	1	2	3	4	5	6	7	8
Time 1								
1. ECR-R Anxiety	-	.10	-.56**	-.56**	-.02	-.18	-.46**	-.52**
		[-0.12, 0.32]	[-0.74, -0.38]	[-0.74, -0.37]	[-0.24, 0.20]	[-0.39, 0.04]	[-0.65, -0.26]	[-0.71, -0.34]
2. ECR-R Avoidance	-	-	-.33**	-.26*	-.11	-.43**	-.12	-.11
			[-0.54, -0.12]	[-0.47, -0.05]	[-0.33, 0.11]	[-0.63, -0.24]	[-0.34, 0.10]	[-0.33, 0.10]
Time 2								
3. FFMQ Total	-	-	-	.70**	.37**	.67**	.65**	.73**
				[0.55, 0.86]	[0.17, 0.57]	[0.51, 0.83]	[0.48, 0.82]	[0.58, 0.88]
4. FFMQ Act with awareness	-	-	-	-	.02	.34**	.44**	.39**
					[-0.20, 0.24]	[0.14, 0.55]	[0.24, 0.64]	[0.19, 0.59]
5. FFMQ Observe	-	-	-	-	-	.12	-.12	.25*
						[-0.10, 0.33]	[-0.34, 0.10]	[0.04, 0.46]
6. FFMQ Describe	-	-	-	-	-	-	.28*	.35**
							[0.07, 0.49]	[0.15, 0.56]
7. FFMQ Non-judging	-	-	-	-	-	-	-	.33**
								[0.12, 0.54]
8. FFMQ Non-reacting	-	-	-	-	-	-	-	-

* $p < .05$; ** $p < .01$.

Table 4. Correlation matrix for FFMQ subscales (T1) and ECR-R dimensions (T2) ($n = 84$, $df = 82$).

		1	2	3	4	5	6	7	8
Time 1	1. FFMQ Total	-	.74**	.40**	.68**	.65**	.62**	-.59**	-.33**
			[0.59, 0.89]	[0.20, 0.61]	[0.51, 0.84]	[0.49, 0.82]	[0.45, 0.79]	[-0.77, -0.41]	[-0.53, -0.12]
	2. FFMQ Act with awareness	-	-	.13	.47**	.44**	.24*	-.46**	-.33**
				[-0.09, 0.35]	[0.28, 0.66]	[0.24, 0.64]	[0.03, 0.46]	[-0.65, -0.26]	[-0.53, -0.12]
	3. FFMQ Observe	-	-	-	.12	-.03	.21	-.12	-.01
					[-0.10, 0.33]	[-0.25, 0.19]	[-0.01, 0.42]	[-0.33, 0.10]	[-0.23, 0.21]
	4. FFMQ Describe	-	-	-	-	.29**	.21	-.23*	-.47**
						[0.08, 0.50]	[-0.01, 0.42]	[-0.44, -0.02]	[-0.66, -0.28]
	5. FFMQ Non-judging	-	-	-	-	-	.23*	-.47**	-.14
							[0.02, 0.44]	[-0.67, -0.28]	[-0.35, 0.08]
	6. FFMQ Non-reacting	-	-	-	-	-	-	-.51**	-.06
								[-0.70, -0.32]	[-0.28, 0.16]
Time 2	7. ECR Anxiety	-	-	-	-	-	-	-	.15
									[-0.06, 0.37]
	8. ECR Avoidance	-	-	-	-	-	-	-	-

* $p < .05$; ** $p < .01$

Table 5. Regression models assessing the predictive value of constructs between T1 and T2 ($n = 84$).

	<i>t</i>	<i>p</i>	β	<i>F</i>	<i>df</i>	<i>p</i>	R^2	ΔR^2	f^2
Predictors	Act with Awareness (T2)			Total Model					
Step 1.				98.88	1, 82	<.001	.55	.55***	1.22
Act with Awareness (T1)	9.94	<.001	.74						
Step 2.				42.48	3, 80	<.001	.61	.07**	1.56
Act with Awareness (T1)	7.42	<.001	.61						
Attachment Anxiety (T1)	-3.75	<.001	-.29						
Attachment Avoidance (T1)	-0.22	.824	-.02						
	Attachment Anxiety (T2)			Total Model					
Step 1.				193.10	1, 82	<.001	.70	.70***	2.33
Attachment Anxiety (T1)	13.90	<.001	.84						
Step 2.				100.66	2, 81	<.001	.71	.01	2.45
Attachment Anxiety (T1)	11.91	<.001	.79						
Act with Awareness (T1)	-1.78	.08	-.12						
	Attachment Avoidance (T2)			Total Model					
Step 1.				163.42	1, 82	<.001	.67	.67***	2.03
Attachment Avoidance (T1)	12.78	<.001	.82						
Step 2.				81.42	2, 81	<.001	.67	.00	2.03
Attachment Avoidance (T1)	11.71	<.001	.80						
Act with Awareness (T1)	-0.69	.493	-.05						
	Non-judging (T2)			Total Model					
Step 1.				41.78	1, 82	<.001	.34	.34***	
Non-judging (T1)	6.46	<.001	.58						
Step 2.				15.63	3, 80	<.001	.37	.03	
Non-judging	4.44	<.001	.47						
Attachment Anxiety (T1)	-2.00	.049	-.21						
Attachment Avoidance (T1)	-0.22	.824	-.02						

** $p < .01$; *** $p < .001$.

Table 5 (*continued*). Regression models assessing the predictive value of constructs between T1 and T2 ($n = 84$).

	<i>t</i>	<i>p</i>	β	<i>F</i>	<i>df</i>	<i>p</i>	R^2	ΔR^2	f^2
Predictors	Attachment Anxiety (T2)			Total Model					
Step 1.				193.09	1, 82	<.001	.70	.70***	
Attachment Anxiety (T1)	13.90	<.001	.84						
Step 2.				95.97	2, 83	<.001	.70	.00	
Attachment Anxiety (T1)	11.45	<.001	.82						
Non-judging (T1)	-0.60	.552	-.04						
	Attachment Avoidance (T2)			Total Model					
Step 1.				163.42	1, 82	<.001	.67	.67***	
Attachment Avoidance (T1)	12.78	<.001	.82						
Step 2.				80.71	2, 81	<.001	.66	.00	
Attachment Avoidance (T1)	12.53	<.001	.82						
Non-judging (T1)	-0.01	.992	-.00						

** $p < .01$; *** $p < .001$.

Table 6. Descriptive statistics and correlation matrix of baseline measures ($n = 70$, $df = 68$).

	M	SD	1	2	3	4	5	6	7	8	9
1. ECR-12 Anxiety	4.36	1.33	-	.16	.40**	-.44**	-.24*	.21	-.28*	-.49**	-.42**
				[-.08, .40]	[.18, .63]	[-.65, -.22]	[-.48, -.01]	[-.03, .45]	[-.51, -.05]	[-.70, -.28]	[-.64, -.20]
2. ECR-12 Avoidance	3.25	1.29	-	-	.55**	-.28*	-.27*	.22	-.33**	-.21	-.20
					[.35, .75]	[-.51, -.05]	[-.50, -.03]	[-.02, .45]	[-.56, -.10]	[-.44, .03]	[-.44, .03]
3. Disorganized attachment	25.66	10.49	-	-	-	-.17	-.22	.40**	-.15	-.31*	-.19
						[-.41, .06]	[-.45, .02]	[.18, .62]	[-.39, .09]	[-.54, -.08]	[-.42, .05]
4. FFMQ-SF Total	73.89	10.35	-	-	-	-	.62**	.22	.68**	.68**	.65**
							[.43, .81]	[-.02, .45]	[.51, .86]	[.50, .86]	[.47, .83]
5. FFMQ-SF Act with awareness	15.56	3.37	-	-	-	-	-	-.16	.28*	.36**	.32**
								[-.40, .08]	[.05, .51]	[.14, .59]	[.10, .55]
6. FFMQ-SF Observe	13.57	3.42	-	-	-	-	-	-	-.01	-.11	-.05
									[-.26, .23]	[-.35, .13]	[-.29, .20]
7. FFMQ-SF Describe	16.30	3.76	-	-	-	-	-	-	-	.36**	.29*
										[.14, .59]	[.06, .52]
8. FFMQ-SF Non-judging	14.74	3.81	-	-	-	-	-	-	-	-	.28**
											[.04, .51]
9. FFMQ-SF Non-reacting	13.71	3.64	-	-	-	-	-	-	-	-	-

* $p < .05$; ** $p < .01$

Table 7. Means, standard error, and 95% CI of pre/post state measures across conditions ($n = 70$).

Measure	Condition	Pre-test				Post-test				Mean change	Sig. effect
		M	SE	95% LB	95% UB	M	SE	95% LB	95% UB		
SAAM Security	Security Prime	5.15	0.14	4.88	5.42	5.81	0.13	5.56	6.06	0.66	T, $p < .001$
	Mindfulness Induction	5.28	0.11	5.05	5.51	5.49	0.12	5.24	5.74	0.21	T x ECR Avoidance, $p = .008$
	Control	5.15	0.14	4.87	5.43	5.41	0.13	5.15	5.68	0.26	C x T, $p = .001$
SAAM Anxiety	Security Prime	4.05	0.15	3.75	4.35	4.13	0.16	3.81	4.45	0.08	T, $p = .038$,
	Mindfulness Induction	4.17	0.16	3.86	4.49	3.91	0.17	3.57	4.25	-0.26	C x T, $p = .018$
	Control	4.07	0.15	3.75	4.38	3.89	0.15	3.60	4.17	-0.18	C x T x ECR Avoidance, $p = .040$
SAAM Avoidance	Security Prime	3.04	0.17	2.70	3.38	2.61	0.15	2.30	2.91	-0.43	T, $p < .001$
	Mindfulness Induction	2.96	0.17	2.62	3.30	2.59	0.16	2.26	2.91	-0.37	
	Control	3.01	0.16	2.69	3.23	2.70	0.16	2.38	3.01	-0.31	
SMS Mind	Security Prime	8.25	0.35	7.56	8.95	13.61	0.25	13.12	14.10	5.36	T, $p < .001$,
	Mindfulness Induction	7.97	0.35	7.27	8.67	9.23	0.37	8.50	9.96	1.26	C x T, $p < .001$
	Control	8.01	0.40	7.22	8.80	9.87	0.37	9.14	10.60	1.86	
SMS Body	Security Prime	7.20	0.33	6.54	7.85	8.58	0.35	7.88	9.28	1.38	C, $p < .001$
	Mindfulness Induction	7.56	0.32	6.92	8.21	11.47	0.30	10.86	12.07	3.91	T, $p < .001$
	Control	7.21	0.33	6.56	7.86	8.77	0.38	8.01	9.53	1.56	C x T, $p < .001$

T = Time; C = Condition