

The SAS System

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\*\*\*\*\* PROCESS Procedure for SAS Release 2.11 \*\*\*\*\*

Written by Andrew F. Hayes, Ph.D. <http://www.afhayes.com>

Documentation available in Hayes (2013). [www.guilford.com/p/hayes3](http://www.guilford.com/p/hayes3)

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Model and Variables

Model = 4  
Y = CFQEMOTION\_12M  
X = SISTOT\_BL  
M = HADSTOT\_6M

Statistical controls:

AGE\_BL FEV1PCT

Sample size:

44

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Outcome: HADSTOT\_6M

Model Summary

R	R-sq	F	df1	df2	p
0.6383	0.4075	9.1684	3.0000	40.0000	0.0001

Model

	coeff	se	t	p	LLCI	ULCI
Constant	-5.6083	7.3213	-0.7660	0.4482	-20.4054	9.1889

SISTOT_BL	0.2757	0.0652	4.2273	0.0001	0.1439	0.4076
AGE_BL	0.2915	0.2601	1.1208	0.2690	-0.2341	0.8171
FEV1PCT	-0.0303	0.0325	-0.9323	0.3568	-0.0961	0.0354

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Outcome: CFQEMOTION\_12M

Model Summary						
R	R-sq	F	df1	df2	p	
0.5139	0.2640	3.4981	4.0000	39.0000	0.0156	

	coeff	se	Model t	p	LLCI	ULCI
constant	106.2730	26.1417	4.0653	0.0002	53.3956	159.1503
HADSTOT_6M	-1.3404	0.5605	-2.3916	0.0217	-2.4741	-0.2067
SISTOT_BL	-0.2300	0.2781	-0.8269	0.4133	-0.7925	0.3326
AGE_BL	-0.4126	0.9363	-0.4407	0.6619	-2.3063	1.4812
FEV1PCT	-0.0623	0.1166	-0.5346	0.5960	-0.2982	0.1735

\*\*\*\*\* TOTAL EFFECT MODEL \*\*\*\*\*

Outcome: CFQEMOTION\_12M

Model Summary						
R	R-sq	F	df1	df2	p	
0.3951	0.1561	2.4666	3.0000	40.0000	0.0761	

	coeff	se	Model t	p	LLCI	ULCI
constant	113.7903	27.4404	4.1468	0.0002	58.3304	169.2502
SISTOT_BL	-0.5996	0.2445	-2.4525	0.0186	-1.0937	-0.1055
AGE_BL	-0.8033	0.9748	-0.8241	0.4148	-2.7734	1.1668
FEV1PCT	-0.0217	0.1220	-0.1777	0.8599	-0.2682	0.2248

\*\*\*\*\* TOTAL, DIRECT AND INDIRECT EFFECTS \*\*\*\*\*

Total effect of X on Y					
Effect	SE	t	p	LLCI	ULCI
-0.5996	0.2445	-2.4525	0.0186	-1.0937	-0.1055

Direct effect of X on Y					
Effect	SE	t	p	LLCI	ULCI
-0.2300	0.2781	-0.8269	0.4133	-0.7925	0.3326

Indirect effect of X on Y				
Effect	Boot SE	BootLLCI	BootULCI	
HADSTOT_6M	-0.3696	0.1398	-0.6767	-0.1220

Normal theory test for indirect effect			
Effect	se	Z	p
-0.3696	0.1813	-2.0388	0.0415

\*\*\*\*\* ANALYSIS NOTES AND WARNINGS \*\*\*\*\*

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

Level of confidence for all confidence intervals in output:

95.0000

NOTE: Some cases were deleted due to missing data. The number of such cases was:

30

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## Model and Variables

Model = 7  
Y = CFQEMOTION\_12M  
X = SISTOT\_BL  
M = HADSTOT\_6M  
W = LOTRTOT\_BL

## Statistical controls:

AGE\_BL FEV1PCT

## Sample size:

39

## Custom seed:

34421

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Outcome: HADSTOT\_6M

R	R-sq	Model Summary		df1	df2	p
		F				
0.6129	0.3757	3.9713		5.0000	33.0000	0.0063

	coeff	se	Model t	p	LLCI	ULCI
Constant	-15.7729	16.8656	-0.9352	0.3565	-50.0870	18.5412
SISTOT_BL	0.5640	0.3511	1.6061	0.1178	-0.1505	1.2784
LOTRTOT_BL	0.7968	0.8798	0.9057	0.3717	-0.9932	2.5868
INT_1	-0.0206	0.0230	-0.8936	0.3780	-0.0674	0.0263
AGE_BL	0.2238	0.2967	0.7544	0.4559	-0.3798	0.8274
FEV1PCT	-0.0336	0.0345	-0.9729	0.3377	-0.1039	0.0367

Interactions:

INT\_1      SISTOT\_BL      X      LOTRTOT\_BL

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Outcome: CFQEMOTION\_12M

Model Summary						
R	R-sq	F	df1	df2	p	
0.5082	0.2583	2.9595	4.0000	34.0000	0.0336	

	coeff	se	Model t	p	LLCI	ULCI
constant	107.8841	28.8661	3.7374	0.0007	49.2199	166.5482
HADSTOT_6M	-1.2266	0.6024	-2.0362	0.0496	-2.4509	-0.0024
SISTOT_BL	-0.3373	0.2929	-1.1516	0.2575	-0.9324	0.2579
AGE_BL	-0.3967	1.0400	-0.3814	0.7053	-2.5102	1.7169
FEV1PCT	-0.0491	0.1218	-0.4031	0.6894	-0.2966	0.1984

\*\*\*\*\* DIRECT AND INDIRECT EFFECTS \*\*\*\*\*

Direct effect of X on Y					
Effect	SE	t	p	LLCI	ULCI
-0.3373	0.2929	-1.1516	0.2575	-0.9324	0.2579

Conditional indirect effect(s) of X on Y at values of the moderator(s)

	LOTRTOT_BL	Effect	Boot SE	BootLLCI	BootULCI
HADSTOT_6M	11.6078	-0.3988	0.2141	-0.9216	-0.0819
HADSTOT_6M	15.4103	-0.3028	0.1348	-0.6377	-0.0860
HADSTOT_6M	19.2127	-0.2069	0.1396	-0.6354	-0.0144

Values for quantitative moderators are the mean and plus/minus one SD from mean.

Values for dichotomous moderators are the two values of the moderator.

\*\*\*\*\* INDEX OF MODERATED MEDIATION \*\*\*\*\*

	Index	Boot SE	BootLLCI	BootULCI
HADSTOT_6M	0.0252	0.0317	-0.0148	0.1070

\*\*\*\*\* ANALYSIS NOTES AND WARNINGS \*\*\*\*\*

Number of bootstrap samples for bias corrected bootstrap confidence intervals:

5000

Level of confidence for all confidence intervals in output:

95.0000

NOTE: Some cases were deleted due to missing data. The number of such cases was:

35