Interpreting (Even Tricky) Regression Coefficients

Dummy Coding Multi-Category Predictors: Main Effects and Interactions

Karen Grace-Martin

Dummy Coding Multi-Category Predictors: Main Effects and Interactions

1. Dummy Coding Multi-Category Predictors
2. Add a Numerical Predictor
3. Interactions With Multi-Category and Numerical Predictors
4. Interactions Between Two Dummy-Coded Variables

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Dummy Coding Multi-Category Predictors

Dummy Coding Multi-Category Predictors

$$E(Y|X) = \beta_0 + \beta_1 X$$

Dummy Coding

X = 1 for comparison group (In Poverty)
X = 0 for reference group (Not in Poverty)

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Dummy Coding Multi-Category Predictors

$$E(Y|X) = \beta_0 + \beta_1 X_1$$

Dummy Coding?

X = 1 for comparison group

X = 0 for reference group

1 Widowed
2 Divorced
3 Separated
4 Married
5 Never Married

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Dummy Coding Multi-Category Predictors

One Way ANOVA

ANOVA

Dependent Variable: PCS

Source	Type III Sum of Squares	df	Mean Square	F	p
Model	28688584.864	4	7172146.216	10.553	.000
Marital Status	28688584.864	4	7172146.216	10.553	.000
Error	1415616717.331	2083	679604.761		
Total	1444305302.195	2087			

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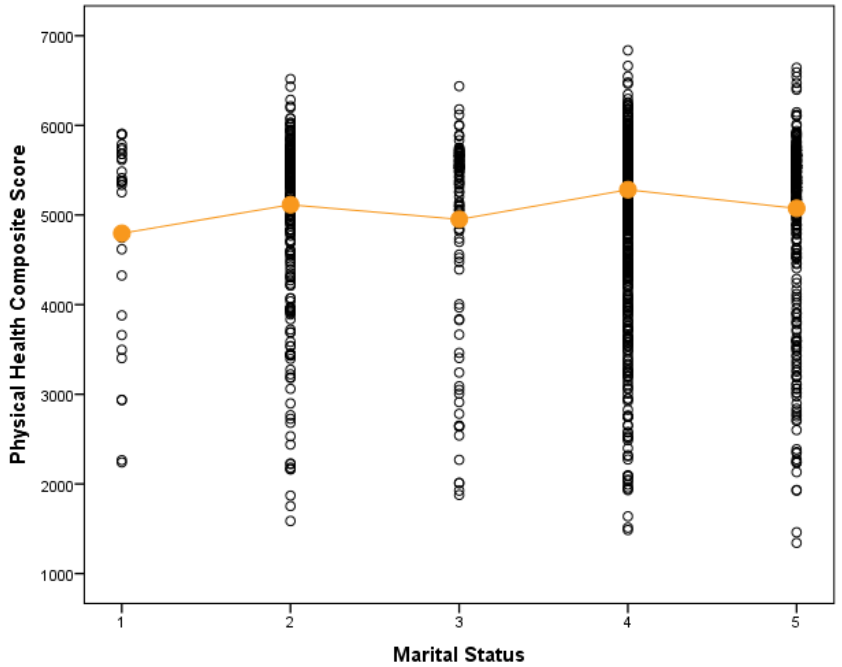
Dummy Coding Multi-Category Predictors

Marital Status

Dependent Variable: PCS

Marital Status	Mean	se
1 Widowed	4795.367	150.511
2 Divorced	5114.843	46.229
3 Separated	4951.396	78.247
4 Married	5282.435	23.515
5 Never Married	5073.690	41.219



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Dummy Coding Multi-Category Predictors

$$E(Y|X) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Dummy Coding

X_1 = 1 for Widowed
X_1 = 0 for Not Widowed

X_2 = 1 for Divorced
X_2 = 0 for Not Divorced

X_3 = 1 for Separated
X_3 = 0 for Not Separated

X_4 = 1 for Married
X_4 = 0 for Not Married

1 Widowed
2 Divorced
3 Separated
4 Married
5 Never Married

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Dummy Coding Multi-Category Predictors

$$E(Y|X) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Dummy Coding

X_1 = 1 for Widowed
X_1 = 0 for Not Widowed

X_2 = 1 for Divorced
X_2 = 0 for Not Divorced

X_3 = 1 for Separated
X_3 = 0 for Not Separated

X_4 = 1 for Married
X_4 = 0 for Not Married

1 Widowed
2 Divorced
3 Separated
4 Married
5 Never Married

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Dummy Coding Multi-Category Predictors

$$E(Y|X) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Dummy Coding

X_1 = 1 for Widowed
X_1 = 0 for Not Widowed

X_2 = 1 for Divorced
X_2 = 0 for Not Divorced

X_3 = 1 for Separated
X_3 = 0 for Not Separated

X_4 = 1 for Married
X4 = 0 for Not Married

1 Widowed
2 Divorced
3 Separated
4 Married
5 Never Married

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Dummy Coding Multi-Category Predictors

$$E(Y|X) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

Dummy Coding

X_1 = 1 for Widowed
X_1 = 0 for Not Widowed

X_2 = 1 for Divorced
X_2 = 0 for Not Divorced

X_3 = 1 for Separated
X_3 = 0 for Not Separated

X_4 = 1 for Married
X4 = 0 for Not Married

1 Widowed
2 Divorced
3 Separated
4 Married
5 Never Married

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Dummy Coding Multi-Category Predictors

$$E(Y|X) = \beta_0 + \beta_1 * \text{Widowed} + \beta_2 * \text{Divorced} + \beta_3 * \text{Separated} + \beta_4 * \text{Married}$$

Dummy Coding

$X_1 = 1$ for Widowed
$X_1 = 0$ for Not Widowed

$X_2 = 1$ for Divorced
$X_2 = 0$ for Not Divorced

$X_3 = 1$ for Separated
$X_3 = 0$ for Not Separated

$X_4 = 1$ for Married
X4 = 0 for Not Married

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Dummy Coding Multi-Category Predictors

One multicategory predictor: Marital Status

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5073.690	41.219	123.091	.000
Widowed	-278.323	156.053	-1.784	.075
Divorced	41.153	61.937	.664	.506
Separated	-122.294	88.440	-1.383	.167
Married	208.745	47.455	4.399	.000
Never Married	0[a]	.	.	.

Marital Status

Dependent Variable: PCS

Marital Status	Mean	se
1 Widowed	4795.367	150.511
2 Divorced	5114.843	46.229
3 Separated	4951.396	78.247
4 Married	5282.435	23.515
5 Never Married	5073.690	41.219

E(PHC|X) = 5074 - 278*Widowed + 41*Divorced - 122*Separated + 209*Married

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Add a Numerical Predictor

Dummy Coding Multi-Category Predictors

One multicategory predictor: Marital Status
One numerical predictor: Depression

ANOVA

Dependent Variable: PCS

Source	Type III Sum of Squares	df	Mean Square	F	p
Model	185944104.857[a]	5	37188820.971	61.505	.000
Marital Status	9324613.561	4	2331153.390	3.855	.004
Depression Centered	157300694.224	1	157300694.224	260.152	.000
Error	1258273731.856	2081	604648.598		
Total	1444217836.713	2086			

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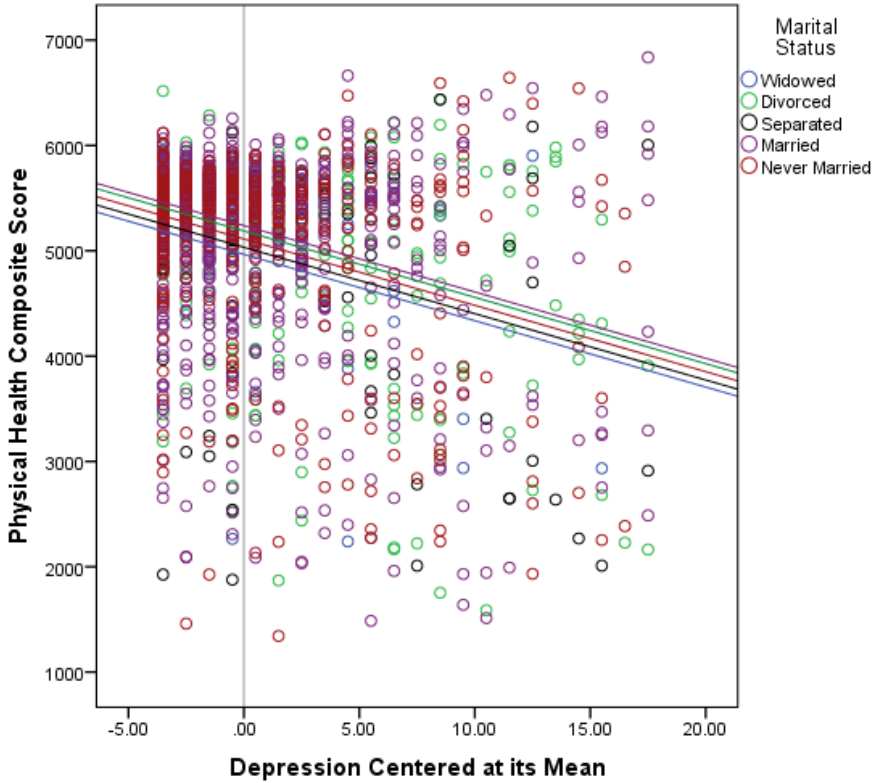
Dummy Coding Multi-Category Predictors



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Dummy Coding Multi-Category Predictors

One multicategory predictor: Marital Status
One numerical predictor: Depression

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5111.723	38.951	131.235	.000
Widowed	-145.919	147.424	-.990	.322
Divorced	75.773	58.461	1.296	.195
Separated	-78.719	83.464	-.943	.346
Married	126.749	45.053	2.813	.005
Never Married	0	.	.	.
Depression Centered	-63.125	3.914	-16.129	.000

E(PHC|X) = 5112 - 146*Widowed + 76*Divorced - 79*Separated + 127*Married - 63*Depression

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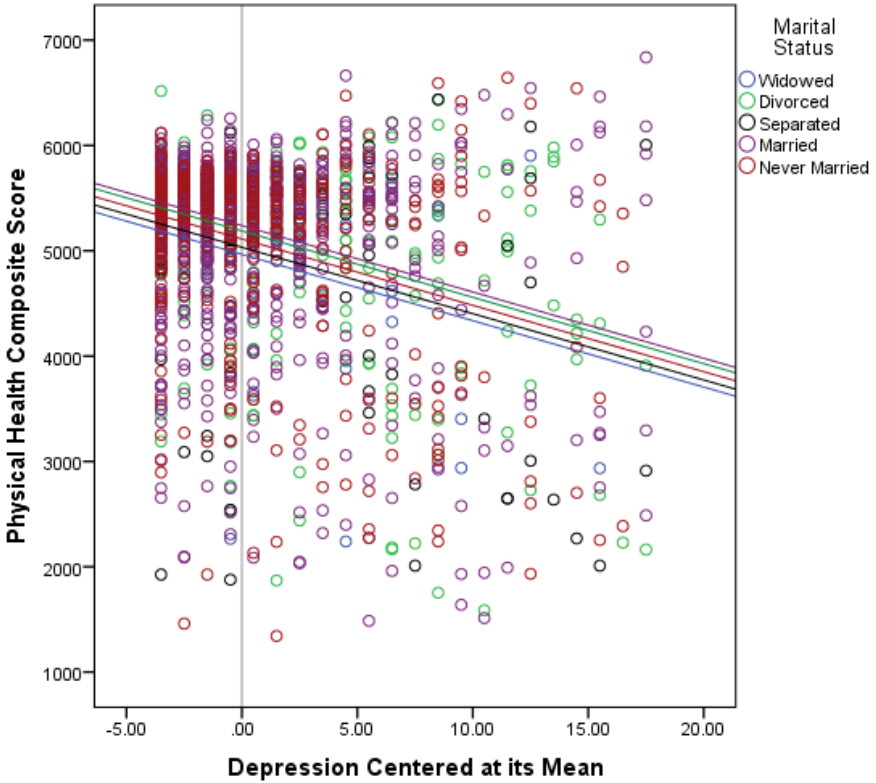
Dummy Coding Multi-Category Predictors

The Model:

E(PHC|X) = 5112

– 146*Widowed
+ 76*Divorced
- 79*Separated
+ 127*Married

- 63*Depression



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Dummy Coding Multi-Category Predictors

The Overall Model:

E(PHC|X) = 5112

– 146*Widowed
+ 76*Divorced
- 79*Separated
+ 127*Married

- 63*Depression

Never Married:

E(PHC|X) = **5112**

– 146*0
+ 76*0
- 79*0
+ 127*0

- 63*Depression

E(PHC|X) = 5112
- 63*Depression

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Dummy Coding Multi-Category Predictors

The Overall Model:

E(PHC|X) = 5112

– 146*Widowed
+ 76*Divorced
- 79*Separated
+ 127*Married

- 63*Depression

Never Married:

E(PHC|X) = 5112

– 146*0
+ 76*0
- 79*0
+ 127*0

- 63*Depression

E(PHC|X) = 5112
- 63*Depression

Widowed:

E(PHC|X) = **5112**

– 146*1
+ 76*0
- 79*0
+ 127*0

- 63*Depression

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Dummy Coding Multi-Category Predictors

The Overall Model:

E(PHC|X) = 5112

– 146*Widowed
+ 76*Divorced
- 79*Separated
+ 127*Married

- 63*Depression

Never Married:

E(PHC|X) = 5112

– 146*0
+ 76*0
- 79*0
+ 127*0

- 63*Depression

E(PHC|X) = 5112
- 63*Depression

Widowed:

E(PHC|X) = **5112**

– 146*1
+ 76*0
- 79*0
+ 127*0

- 63*Depression

E(PHC|X) = 5112 - 146
- 63*Depression

= 4966 – 63*Depression

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Dummy Coding Multi-Category Predictors

The Overall Model:	Never Married:	Married:
E(PHC|X) = 5112	E(PHC|X) = 5112	E(PHC|X) = **5112**
– 146*Widowed	– 146*0	– 146*0
+ 76*Divorced	+ 76*0	+ 76*0
- 79*Separated	- 79*0	- 79*0
+ 127***Married**	+ 127*0	**+ 127*1**
- 63*Depression	- 63*Depression	**- 63*Depression**
	E(PHC|X) = 5112 - 63*Depression	

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Dummy Coding Multi-Category Predictors

The Overall Model:

E(PHC|X) = 5112

– 146*Widowed
+ 76*Divorced
- 79*Separated
+ 127***Married**

- 63*Depression

Never Married:

E(PHC|X) = 5112

– 146*0
+ 76*0
- 79*0
+ 127*0

- 63*Depression

E(PHC|X) = 5112
- 63*Depression

Married:

E(PHC|X) = **5112**

– 146*0
+ 76*0
- 79*0
+ 127*1

- 63*Depression

E(PHC|X) = 5112 + 127
- 63*Depression

= 5239 – 63*Depression

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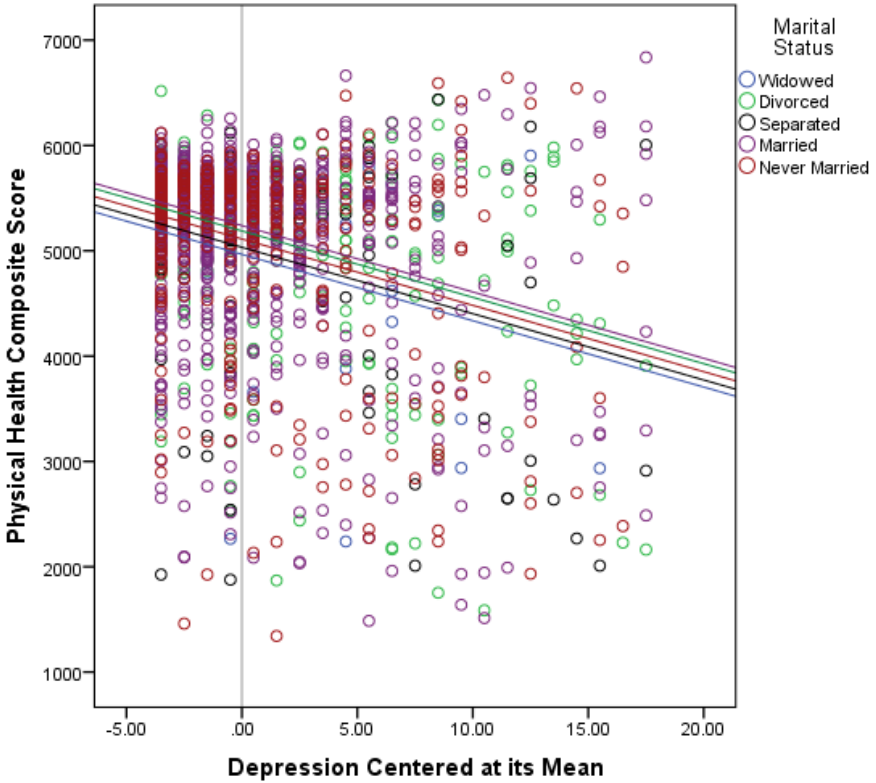
Dummy Coding Multi-Category Predictors

The Model:

E(PHC|X) = 5112

– 146*Widowed
+ 76*Divorced
- 79*Separated
+127*Married

- 63*Depression



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Interactions With Multi-Category and Numerical Predictors

Interactions With Multi-Category and Numerical Predictors

One multi-category predictor: Marital Status
One numerical predictor: Depression
Interaction

ANOVA

Dependent Variable: PCS

Source	Type III Sum of Squares	df	Mean Square	F	p
Model	188235457.550[a]	9	20915050.839	34.587	.000
Marital Status	8730669.553	4	2182667.388	3.609	.006
Depression Centered	60699656.147	1	60699656.147	100.378	.000
Marital Status * Depression Centered	2291352.693	4	572838.173	.947	.436
Error	1255982379.163	2077	604709.860		
Total	1444217836.713	2086			

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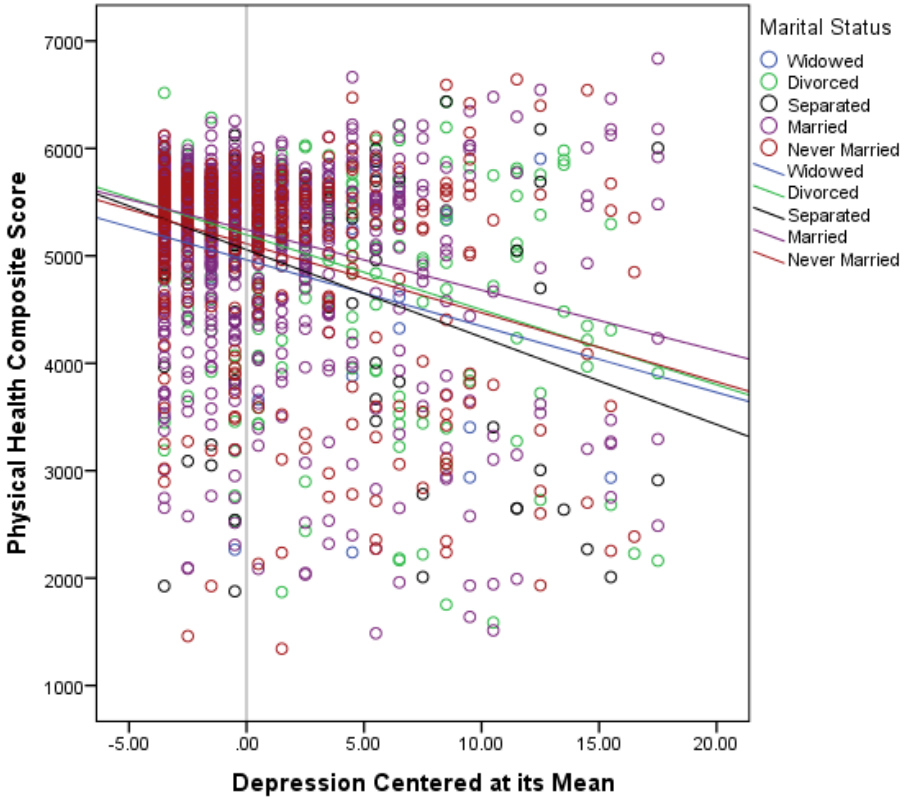
Interactions With Multi-Category and numerical Predictors



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Interactions With Multi-Category and Numerical Predictors

E(PHC|X) = 5112
– 150*Widowed
+ 83*Divorced
– 56*Separated
+ 131*Married

– 64*Depression
+ 2.5*Widowed*Depression
– 5.5*Divorced*Depression
– 17*Separated*Depression
+ 7.9*Married*Depression

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5112.399	39.201	130.415	.000
Widowed	-150.456	164.714	-.913	.361
Divorced	82.690	59.435	1.391	.164
Separated	-55.846	85.432	-.654	.513
Married	130.796	45.224	2.892	.004
Never Married	0[a]	.	.	.
Depression Centered	-64.246	8.289	-7.751	.000
Widowed * Depression Centered	2.552	28.540	.089	.929
Divorced * Depression Centered	-5.476	11.823	-.463	.643
Separated * Depression Centered	-17.094	16.019	-1.067	.286
Married * Depression Centered	7.929	10.102	.785	.433
Never Married * Depression Centered	0[a]	.	.	.

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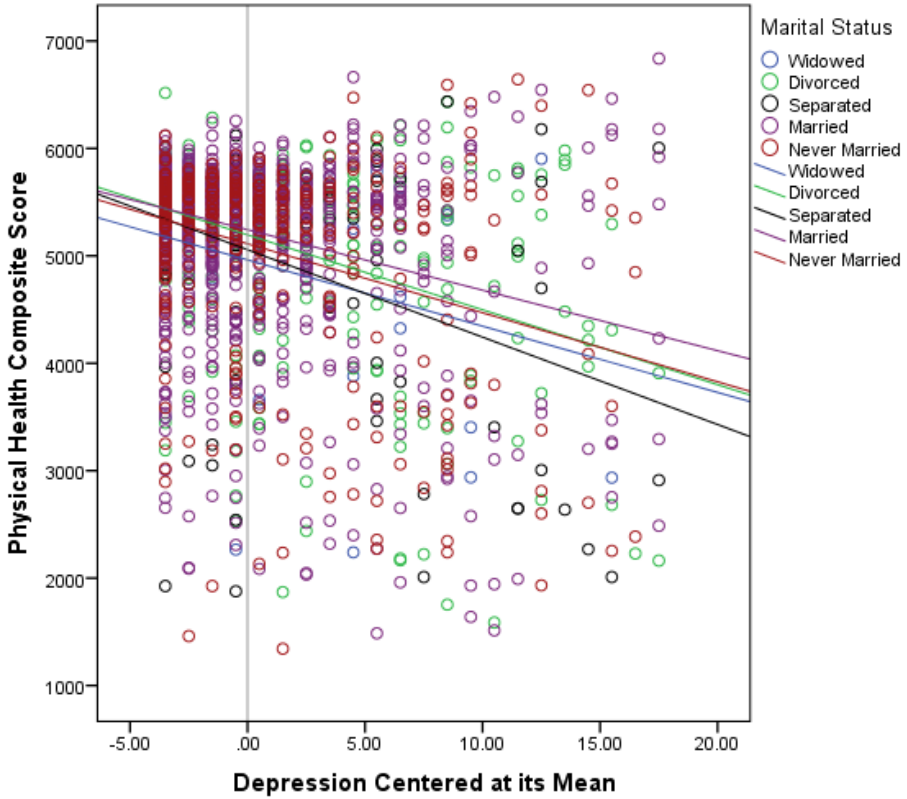
Interactions With Multi-Category and Numerical Predictors

E(PHC|X) = 5112
– 150*Widowed
+ 83*Divorced
– 56*Separated
+ 131*Married

– 64*Depression
+ 2.5*Widowed*Depression
– 5.5*Divorced*Depression
– 17*Separated*Depression
+ 7.9*Married*Depression



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Interactions With Multi-Category and Numerical Predictors

The Overall Model:

E(PHC|X) = 5112
– 150*Widowed
+ 83*Divorced
– 56*Separated
+ 131*Married

– 64*Depression
+ 2.5*Widowed*Depression
– 5.5*Divorced*Depression
– 17*Separated*Depression
+ 7.9*Married*Depression

For Never Married:

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Interactions With Multi-Category and Numerical Predictors

The Overall Model:

E(PHC|X) = 5112
– 150*Widowed
+ 83*Divorced
– 56*Separated
+ 131*Married

– 64*Depression
+ 2.5*Widowed*Depression
– 5.5*Divorced*Depression
– 17*Separated*Depression
+ 7.9*Married*Depression

For Never Married:

E(PHC|X) = **5112**
– 150*0
+ 83*0
– 56*0
+ 131*0

– 64*Depression
+ 2.5*0*Depression
– 5.5*0*Depression
– 17*0*Depression
+ 7.9*0*Depression

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Interactions With Multi-Category and Numerical Predictors

The Overall Model:

E(PHC|X) = 5112
– 150*Widowed
+ 83*Divorced
– 56*Separated
+ 131*Married

– 64*Depression
+ 2.5*Widowed*Depression
– 5.5*Divorced*Depression
– 17*Separated*Depression
+ 7.9*Married*Depression

For Never Married:

E(PHC|X) = **5112**
– 150*0
+ 83*0
– 56*0
+ 131*0

– 64*Depression
+ 2.5*0*Depression
– 5.5*0*Depression
– 17*0*Depression
+ 7.9*0*Depression

E(PHC|X) = 5112 – 64*Depression

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Interactions With Multi-Category and Numerical Predictors

The Overall Model:

E(PHC|X) = 5112
– 150*Widowed
+ 83*Divorced
– 56*Separated
+ 131*Married

– 64*Depression
+ 2.5*Widowed*Depression
– 5.5*Divorced*Depression
– 17*Separated*Depression
+ 7.9*Married*Depression

For Widowed:

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Interactions With Multi-Category and Numerical Predictors

The Overall Model:

E(PHC|X) = 5112
– 150*Widowed
+ 83*Divorced
– 56*Separated
+ 131*Married

– 64*Depression
+ 2.5*Widowed*Depression
– 5.5*Divorced*Depression
– 17*Separated*Depression
+ 7.9*Married*Depression

For Widowed:

E(PHC|X) = 5112
– 150*1
+ 83*0
– 56*0
+ 131*0

– 64*Depression
+ 2.5*1*Depression
– 5.5*0*Depression
– 17*0*Depression
+ 7.9*0*Depression

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Interactions With Multi-Category and Numerical Predictors

The Overall Model:

E(PHC|X) = 5112
– 150*Widowed
+ 83*Divorced
– 56*Separated
+ 131*Married

– 64*Depression
+ 2.5*Widowed*Depression
– 5.5*Divorced*Depression
– 17*Separated*Depression
+ 7.9*Married*Depression

For Widowed:

E(PHC|X) = 5112
– 150*1
+ 83*0
– 56*0
+ 131*0

– 64*Depression
+ 2.5*1*Depression
– 5.5*0*Depression
– 17*0*Depression
+ 7.9*0*Depression

E(PHC|X) = 5112 – 150 + (– 64 + 2.5)*Depression
= 4962 – 61.5*Depression

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Interactions With Multi-Category and Numerical Predictors

The Overall Model:

E(PHC|X) = 5112
– 150*Widowed
+ 83*Divorced
– 56*Separated
+ 131*Married

– 64*Depression
+ 2.5*Widowed*Depression
– 5.5*Divorced*Depression
– 17*Separated*Depression
+ 7.9*Married*Depression

For Married:

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Interactions With Multi-Category and Numerical Predictors

The Overall Model:

E(PHC|X) = 5112
– 150*Widowed
+ 83*Divorced
– 56*Separated
+ 131*Married

– 64*Depression
+ 2.5*Widowed*Depression
– 5.5*Divorced*Depression
– 17*Separated*Depression
+ 7.9*Married*Depression

For Married:

E(PHC|X) = 5112
– 150*0
+ 83*0
– 56*0
+ 131*1

– 64*Depression
+ 2.5*0*Depression
– 5.5*0*Depression
– 17*0*Depression
+ 7.9*1*Depression

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Interactions With Multi-Category and Numerical Predictors

The Overall Model:

E(PHC|X) = 5112
– 150*Widowed
+ 83*Divorced
– 56*Separated
+ 131*Married

– 64*Depression
+ 2.5*Widowed*Depression
– 5.5*Divorced*Depression
– 17*Separated*Depression
+ 7.9*Married*Depression

For Married:

E(PHC|X) = 5112
– 150*0
+ 83*0
– 56*0
+ 131*1

– 64*Depression
+ 2.5*0*Depression
– 5.5*0*Depression
– 17*0*Depression
+ 7.9*1*Depression

E(PHC|X) = 5112 + 131 + (– 64 + 7.9)*Depression
= 5243 – 56.1*Depression

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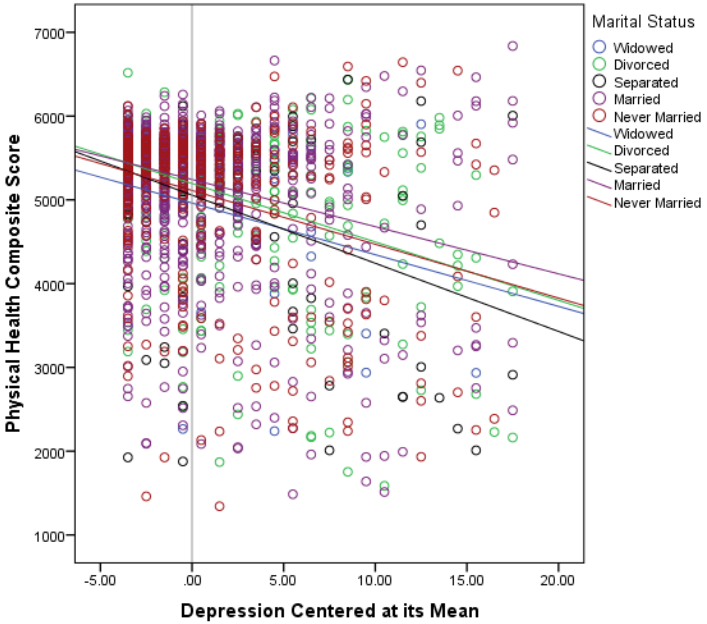
Interactions With Multi-Category and Numerical Predictors



Intercept for reference group: Never Married

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5112.399	39.201	130.415	.000
Widowed	-150.456	164.714	-.913	.361
Divorced	82.690	59.435	1.391	.164
Separated	-55.846	85.432	-.654	.513
Married	130.796	45.224	2.892	.004
Never Married	0[a]	.	.	.
Depression Centered	-64.246	8.289	-7.751	.000
Widowed * Depression Centered	2.552	28.540	.089	.929
Divorced * Depression Centered	-5.476	11.823	-.463	.643
Separated * Depression Centered	-17.094	16.019	-1.067	.286
Married * Depression Centered	7.929	10.102	.785	.433
Never Married * Depression Centered	0[a]	.	.	.

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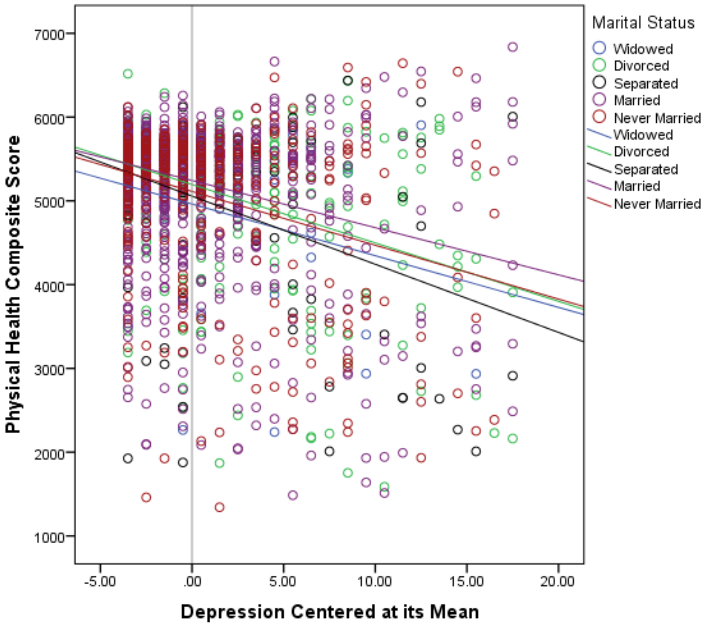
Interactions With Multi-Category and Numerical Predictors



Slope for reference group: Never Married

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5112.399	39.201	130.415	.000
Widowed	-150.456	164.714	-.913	.361
Divorced	82.690	59.435	1.391	.164
Separated	-55.846	85.432	-.654	.513
Married	130.796	45.224	2.892	.004
Never Married	0[a]	.	.	.
Depression Centered	-64.246	8.289	-7.751	.000
Widowed * Depression Centered	2.552	28.540	.089	.929
Divorced * Depression Centered	-5.476	11.823	-.463	.643
Separated * Depression Centered	-17.094	16.019	-1.067	.286
Married * Depression Centered	7.929	10.102	.785	.433
Never Married * Depression Centered	0[a]	.	.	.

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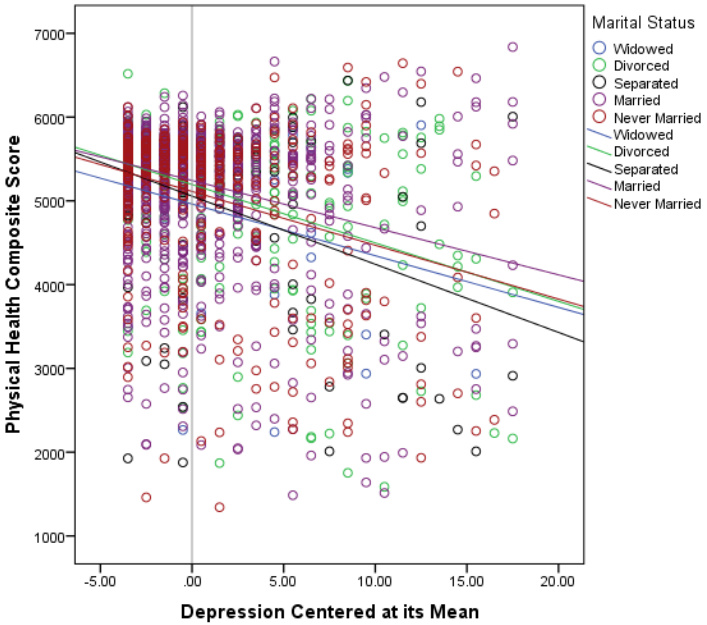
Interactions With Multi-Category and Numerical Predictors



Differences in intercept between each comparison group and reference group

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5112.399	39.201	130.415	.000
Widowed	-150.456	164.714	-.913	.361
Divorced	82.690	59.435	1.391	.164
Separated	-55.846	85.432	-.654	.513
Married	130.796	45.224	2.892	.004
Never Married	0[a]	.	.	.
Depression Centered	-64.246	8.289	-7.751	.000
Widowed * Depression Centered	2.552	28.540	.089	.929
Divorced * Depression Centered	-5.476	11.823	-.463	.643
Separated * Depression Centered	-17.094	16.019	-1.067	.286
Married * Depression Centered	7.929	10.102	.785	.433
Never Married * Depression Centered	0[a]	.	.	.

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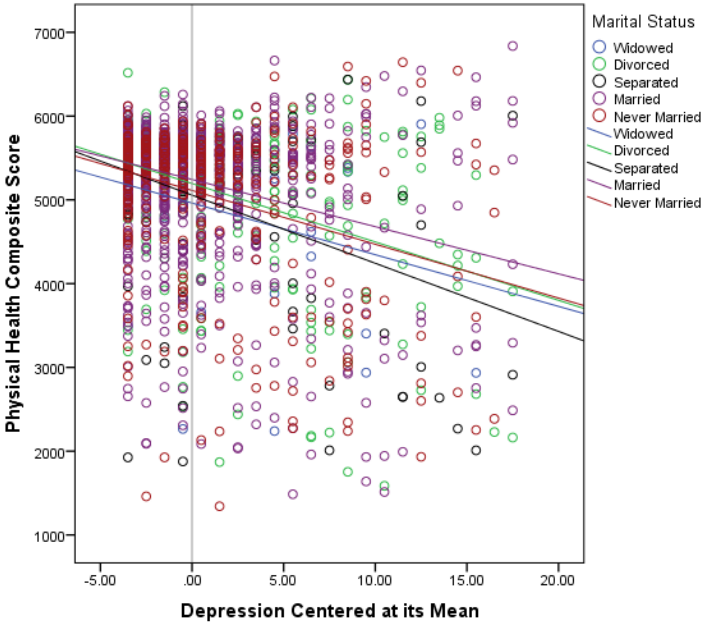
Interactions With Multi-Category and Numerical Predictors



Differences in slopes between each comparison group and reference group

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5112.399	39.201	130.415	.000
Widowed	-150.456	164.714	-.913	.361
Divorced	82.690	59.435	1.391	.164
Separated	-55.846	85.432	-.654	.513
Married	130.796	45.224	2.892	.004
Never Married	0[a]	.	.	.
Depression Centered	-64.246	8.289	-7.751	.000
Widowed * Depression Centered	2.552	28.540	.089	.929
Divorced * Depression Centered	-5.476	11.823	-.463	.643
Separated * Depression Centered	-17.094	16.019	-1.067	.286
Married * Depression Centered	7.929	10.102	.785	.433
Never Married * Depression Centered	0[a]	.	.	.

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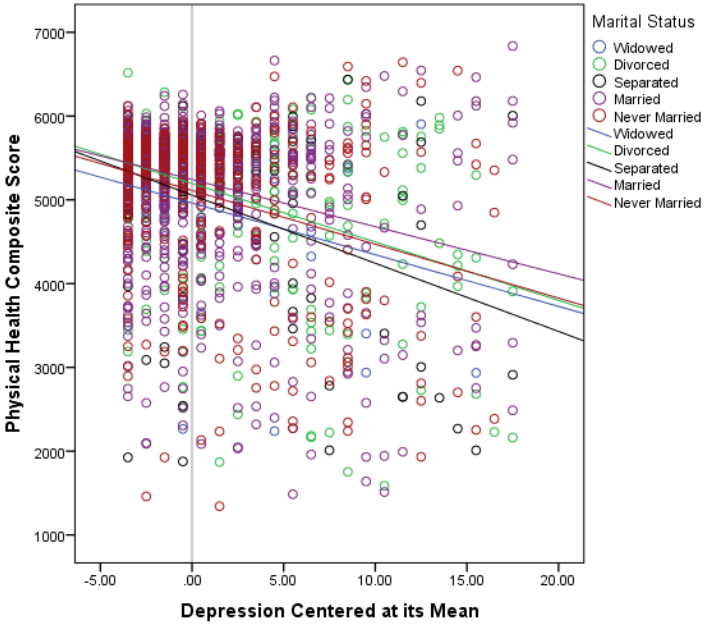
Interactions With Multi-Category and Numerical Predictors



Marginal Means at Depression Centered=0

Dependent Variable: PCS

Variable	Mean	se
Widowed	4961.943	159.981
Divorced	5195.089	44.674
Separated	5056.552	75.907
Married	5243.194	22.550
Never Married	5112.399	39.201

P values for differences in marginal means at Depression Centered=0

Dependent Variable: PCS Variable

	Widowed	Divorced	Separated	Married
Divorced	0.556			
Separated	0.718	0.122		
Married	0.186	0.093	0.005	
Never Married	0.631	0.820	0.170	0.054

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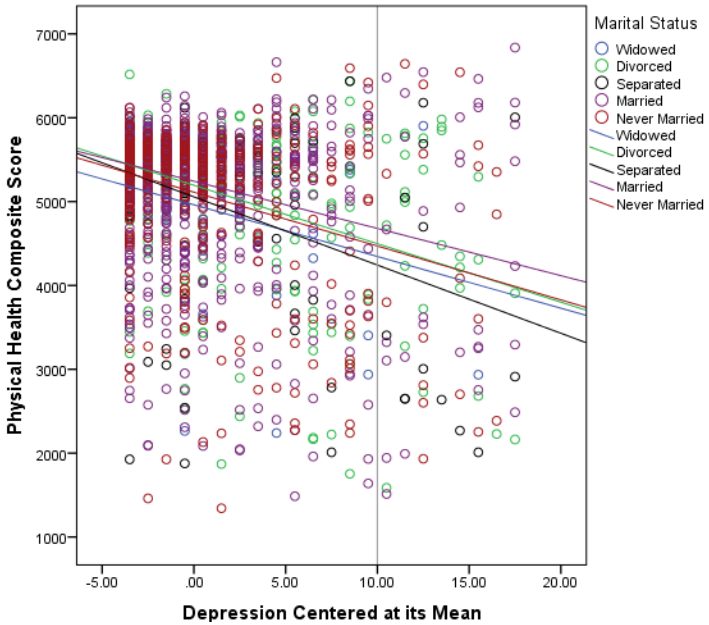
Interactions With Multi-Category and Numerical Predictors



Marginal Means at Depression Centered=10

Dependent Variable: PCS

Variable	Mean	se
Widowed	4344.994	244.748
Divorced	4497.869	86.412
Separated	4243.150	140.334
Married	4680.019	65.613
Never Married	4469.934	87.062

P values for differences in marginal means at Depression Centered=10

Dependent Variable: PCS Variable

	Widowed	Divorced	Separated	Married
Divorced	0.161			
Separated	0.593	0.116		
Married	0.082	0.337	0.019	
Never Married	0.361	0.164	0.513	0.004

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Interactions Between Two Dummy-Coded Variables

Interactions Between Two Dummy-Coded Variables

Two binary predictors: Poverty Status
Sex

Interaction

ANOVA

Dependent Variable: PCS

Source	Type III Sum of Squares	df	Mean Square	F	p
Model	72233316.016[a]	3	24077772.005	36.981	.000
Sex	5002117.237	1	5002117.237	7.683	.006
Poverty Status	54135386.150	1	54135386.150	83.147	.000
Sex * Poverty Status	1366186.530	1	1366186.530	2.098	.148
Error	1104227069.539	1696	651077.282		
Total	1176460385.555	1699			

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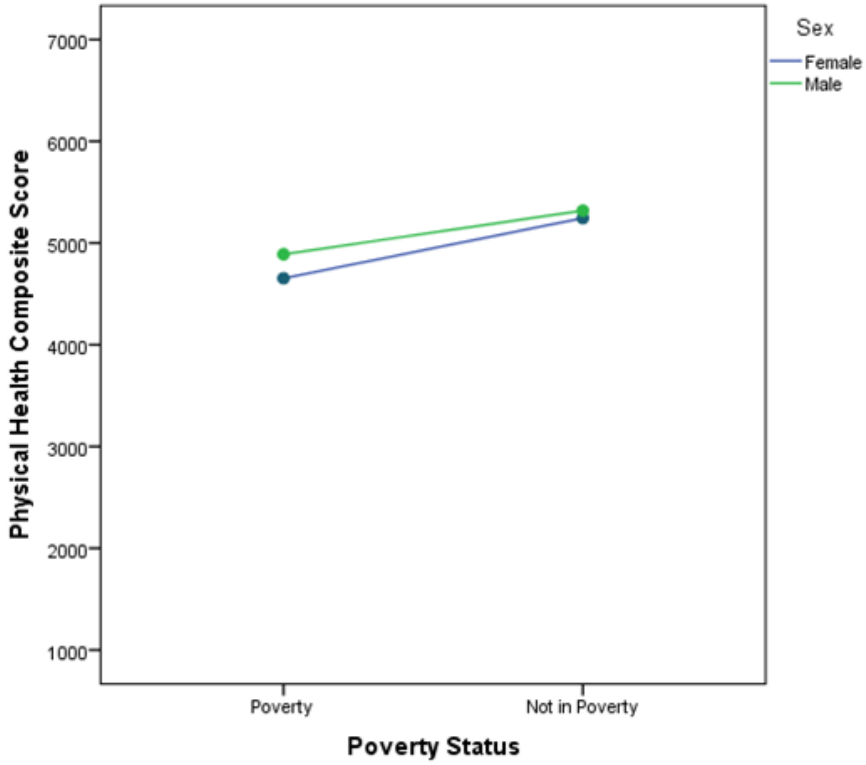
Interactions Between Two Dummy-Coded Variables

*Sex * Poverty Status*

Dependent Variable: PCS

Sex	Poverty Status	Mean	se
1 Female	2 In Poverty	4653.343	61.525
	3 Not in Poverty	5244.748	30.541
2 Male	2 In Poverty	4889.543	83.225
	3 Not in Poverty	5318.804	29.742



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*Sex * Poverty Status*

Dependent Variable: PCS

Sex	Poverty Status	Mean	se
1 Female	2 In Poverty	4653.343	61.525
	3 Not in Poverty	5244.748	30.541
2 Male	2 In Poverty	4889.543	83.225
	3 Not in Poverty	5318.804	29.742

Mean of the reference group on both variables

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5318.804	29.742	178.828	.000
Female	-74.056	42.631	-1.737	.083
Male	0[a]	.	.	.
In Poverty	-429.262	88.380	-4.857	.000
Not In Poverty	0[a]	.	.	.
Female * In Poverty	-162.143	111.933	-1.449	.148
Female * Not In Poverty	0[a]	.	.	.
Male * In Poverty	0[a]	.	.	.
Male * Not In Poverty	0[a]	.	.	.

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*Sex * Poverty Status*

Dependent Variable: PCS

Sex	Poverty Status	Mean	se
1 Female	2 In Poverty	4653.343	61.525
	3 Not in Poverty	5244.748	30.541
2 Male	2 In Poverty	4889.543	83.225
	3 Not in Poverty	5318.804	29.742

Difference in means for sex ONLY for the reference group of Poverty Status

5244.7 - 5318.8 = -74

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5318.804	29.742	178.828	.000
Female	-74.056	42.631	-1.737	.083
Male	0[a]	.	.	.
In Poverty	-429.262	88.380	-4.857	.000
Not In Poverty	0[a]	.	.	.
Female * In Poverty	-162.143	111.933	-1.449	.148
Female * Not In Poverty	0[a]	.	.	.
Male * In Poverty	0[a]	.	.	.
Male * Not In Poverty	0[a]	.	.	.

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*Sex * Poverty Status*

Dependent Variable: PCS

Sex	Poverty Status	Mean	se
1 Female	2 In Poverty	4653.343	61.525
	3 Not in Poverty	5244.748	30.541
2 Male	2 In Poverty	4889.543	83.225
	3 Not in Poverty	5318.804	29.742

Difference in means for Poverty Status ONLY for the reference group of Sex

4889.5 - 5318.8 = - 429.2

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5318.804	29.742	178.828	.000
Female	-74.056	42.631	-1.737	.083
Male	0	.	.	.
In Poverty	-429.262	88.380	-4.857	.000
Not In Poverty	0	.	.	.
Female * In Poverty	-162.143	111.933	-1.449	.148
Female * Not In Poverty	0	.	.	.
Male * In Poverty	0	.	.	.
Male * Not In Poverty	0	.	.	.

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*Sex * Poverty Status*

Dependent Variable: PCS

Sex	Poverty Status	Mean	se
1 Female	2 In Poverty	4653.343	61.525
	3 Not in Poverty	5244.748	30.541
2 Male	2 In Poverty	4889.543	83.225
	3 Not in Poverty	5318.804	29.742

Difference in the Poverty Status mean differences

(4889.5 - 5318.8) -

(4653.3 – 5244.7) = - 162.1

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5318.804	29.742	178.828	.000
Female	-74.056	42.631	-1.737	.083
Male	0	.	.	.
In Poverty	-429.262	88.380	-4.857	.000
Not In Poverty	0	.	.	.
Female * In Poverty	-162.143	111.933	-1.449	.148
Female * Not In Poverty	0	.	.	.
Male * In Poverty	0	.	.	.
Male * Not In Poverty	0	.	.	.

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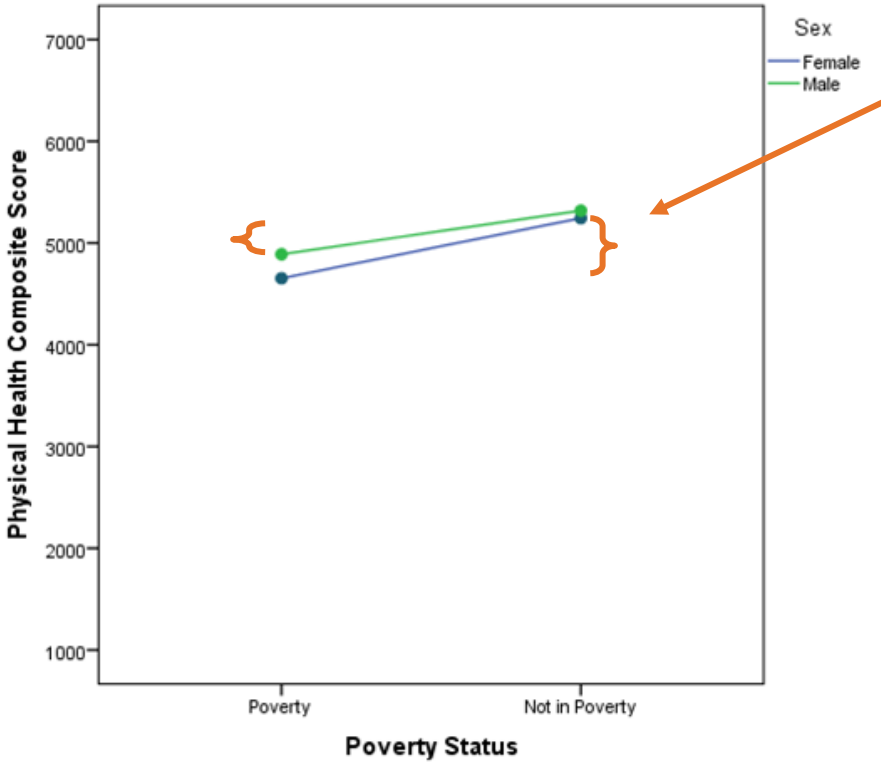

Difference in the Poverty Status mean differences

(4889.5 - 5318.8) -

(4653.3 – 5244.7) = - 162.1

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5318.804	29.742	178.828	.000
Female	-74.056	42.631	-1.737	.083
Male	0	.	.	.
In Poverty	-429.262	88.380	-4.857	.000
Not In Poverty	0	.	.	.
Female * In Poverty	-162.143	111.933	-1.449	.148
Female * Not In Poverty	0	.	.	.
Male * In Poverty	0	.	.	.
Male * Not In Poverty	0	.	.	.

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*Sex * Poverty Status*

Dependent Variable: PCS

Sex	Poverty Status	Mean	se
1 Female	2 In Poverty	4653.343	61.525
	3 Not in Poverty	5244.748	30.541
2 Male	2 In Poverty	4889.543	33.225
	3 Not in Poverty	5318.804	29.742

Difference in the Sex mean differences

(5244.7 - 5318.8) –

(4653.3 - 4889.5) = - 162.1

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5318.804	29.742	178.828	.000
Female	-74.056	42.631	-1.737	.083
Male	0	.	.	.
In Poverty	-429.262	88.380	-4.857	.000
Not In Poverty	0	.	.	.
Female * In Poverty	-162.143	111.933	-1.449	.148
Female * Not In Poverty	0	.	.	.
Male * In Poverty	0	.	.	.
Male * Not In Poverty	0	.	.	.

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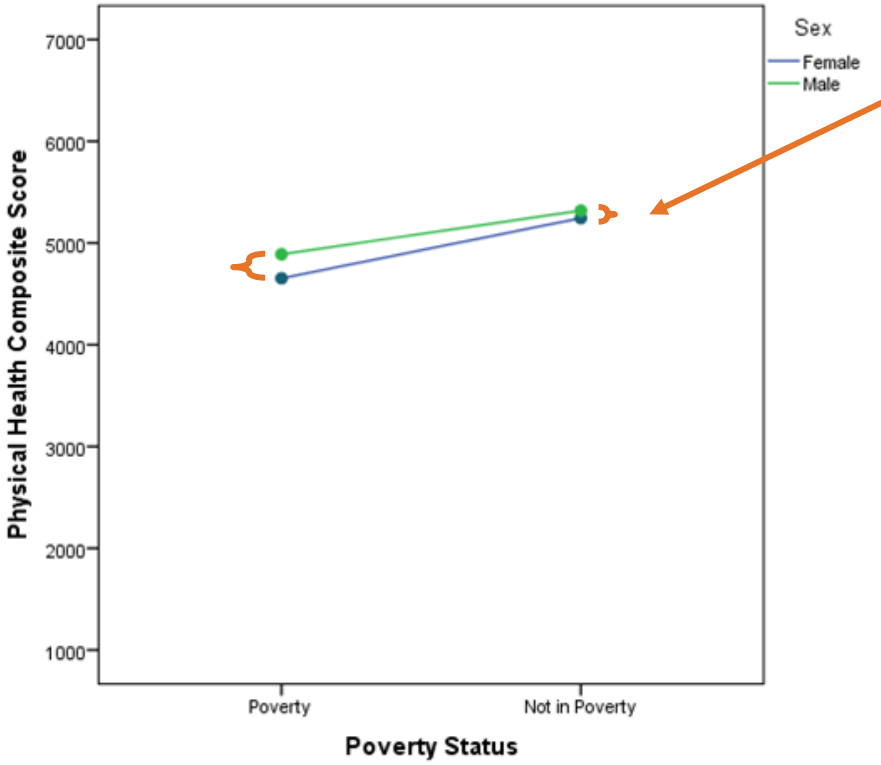

Difference in the Sex mean differences

(4889.5 - 5318.8) -

(4653.3 – 5244.7) = - 162.1

Regression Coefficients

Dependent Variable: PCS

Variable	B	se	t	p
Intercept	5318.804	29.742	178.828	.000
Female	-74.056	42.631	-1.737	.083
Male	0	.	.	.
In Poverty	-429.262	88.380	-4.857	.000
Not In Poverty	0	.	.	.
Female * In Poverty	-162.143	111.933	-1.449	.148
Female * Not In Poverty	0	.	.	.
Male * In Poverty	0	.	.	.
Male * Not In Poverty	0	.	.	.

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