

Web Material

**Causal Model of the Association of Social Support With Antepartum Depression:
A Marginal Structural Modeling Approach**

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Web Table 1. Distributions of the Estimated Weights for Treatment and Censoring, PrOMIS, Peru, 2012-2014

	Mean	Standard Deviation	Median	Percentile 1	Percentile 25	Percentile 75	Percentile 99
Social Support Satisfaction Score							
Treatment weights							
Interview 1							
Stabilized weights	1.0000	0.1962	0.9656	0.7313	0.8437	1.1044	1.5395
Unstabilized weights	1.9999	0.4112	1.9067	1.4228	1.7047	2.2208	3.2460
Interview 2							
Stabilized weights	1.0000	0.1070	0.9805	0.8056	0.9210	1.0631	1.2883
Unstabilized weights	1.9994	0.4531	1.8991	1.3370	1.6824	2.2550	3.5792
Censoring weights							
Stabilized weights	1.0002	0.0157	0.9940	0.9785	0.9898	1.0191	1.0350
Unstabilized weights	1.4657	0.0879	1.4625	1.3099	1.3937	1.5302	1.6785
Final weights							
Stabilized weights	0.9996	0.2292	0.9637	0.6367	0.8236	1.1103	1.7311
Unstabilized weights	5.8395	1.7973	5.7242	3.1433	4.4271	6.8287	11.6101
Social Support Number Score							
Treatment weights							
Interview 1							
Stabilized weights	1.0006	0.2480	0.9525	0.6293	0.8329	1.1078	1.8397
Unstabilized weights	2.0022	0.7289	1.8062	1.1922	1.5132	2.2199	4.7245
Interview 2							
Stabilized weights	1.0000	0.0469	0.9981	0.8976	0.9667	1.0260	1.1282
Unstabilized weights	2.0012	0.6943	1.7325	1.2544	1.5011	2.3642	4.3216
Censoring weights							
Stabilized weights	1.0003	0.0158	0.9940	0.9784	0.9895	1.0189	1.0352
Unstabilized weights	1.4655	0.0864	1.4603	1.3162	1.3966	1.5295	1.6730
Final weights							

Stabilized weights	0.9979	0.2521	0.9469	0.6254	0.8287	1.1066	1.8598
Unstabilized weights	5.8188	2.7163	5.2884	2.4606	3.6427	7.3126	15.0951

Web Table 2. Characteristics of Women Who Were Lost to Follow-up, PrOMIS, Peru, 2012-2014

Characteristics	Not lost to follow up (N=2,292)		Lost to follow up (N=1,044)		P-value
	N	%	N	%	
Maternal age (years) ^a	28.2 (6.2)		28.2 (6.6)		0.90
Maternal age (years)					
18-19	112	4.9	60	5.8	0.19
20-29	1,278	55.8	581	55.7	
30-34	501	21.9	201	19.3	
≥35	401	17.5	202	19.4	
Education (years)					
≤6	94	4.1	51	4.9	0.06
7-12	1,223	53.4	593	56.8	
>12	968	42.2	398	38.1	
Mestizo Ethnicity	1,738	75.8	771	73.9	0.26
Married/living with partner	1,859	81.1	832	79.7	0.30
Employed during pregnancy	1,047	45.7	486	46.6	0.65
Access to basic foods					
Hard	1,138	49.7	520	49.8	0.89
Not very hard	1,154	50.3	522	50.0	
Planned pregnancy	963	42.0	433	41.5	0.79
Nulliparous	1,139	49.7	491	47.0	0.16
Gestational age (weeks) at interview 1 ^a	9.6 (3.5)		8.6 (3.3)		<0.0001
Early pregnancy body mass index (kg/m ²) ^b					
<18.5	42	1.8	21	2.0	0.10
18.5-24.9	1,117	48.7	471	45.1	
25-29.9	835	36.4	380	36.4	
≥30	276	12.0	154	14.8	
Childhood abuse	1,661	72.5	713	68.3	0.01
Lifetime intimate partner violence (physical or sexual)	800	34.9	411	39.4	0.01
Lifetime abuse					
No abuse	485	21.2	249	23.9	0.001
Childhood abuse only	1,003	43.8	380	36.4	

Intimate partner violence only	146	6.4	82	7.9	
Childhood abuse and intimate partner violence	654	28.5	329	31.5	
Depression (Interview 1)	627	27.4	313	30.0	0.12
Low satisfaction with social support	1,193	52.1	567	54.3	0.23
Low number of available support providers	1,390	60.6	647	62.0	0.47

^aValues are expressed as mean (standard deviation)

^bWeight (kg)/height (m)²

Web Table 3. Inverse-Probability-of-Treatment Weighted Estimates of the Parameters of a Marginal Structural Model for the Causal Association of Low Social Support on Antepartum Depression in Late Pregnancy, PrOMIS, Peru, 2012-2014

Covariates	aOR	Valid Conservative 95% CI^c
Satisfaction with Social Support (before pregnancy)		
High	Reference	
Low ^a	0.88	0.57, 1.35
Satisfaction with Social Support (since being pregnant)		
High	Reference	
Low ^b	1.43	0.97, 2.10
Interaction term	1.12	0.66, 1.90
Time-independent baseline covariates		
Maternal age (years)		
18-19	1.00	0.54, 1.86
20-29	Reference	
30-34	0.98	0.70, 1.38
≥35	1.21	0.85, 1.71
Education (years)		
≤6	1.22	0.66, 2.24
7-12	1.20	0.92, 1.56
>12	Reference	
Race/ethnicity		
Mestizo	Reference	
Other	1.12	0.84, 1.49
Marital status		
Married/living with partner	Reference	
Other	1.36	0.97, 1.90
Access to basic foods		
Hard	1.55	1.20, 2.00
Not very hard	Reference	
Planned pregnancy		
Yes	Reference	
No	1.51	1.15, 1.98
Parity		

Nulliparous	Reference	
Multiparous	1.32	0.99, 1.78
Lifetime abuse		
No abuse	Reference	
Childhood abuse only	1.44	0.94, 2.19
Intimate partner violence only	2.53	1.42, 4.49
Childhood abuse and intimate partner violence	3.58	2.37, 5.43

Abbreviations: aOR, adjusted odds ratio; OR, odds ratio; CI, confidence interval

^aLow social support satisfaction before pregnancy was defined as social support satisfaction score ≤ 33 .

^bLow social support satisfaction since being pregnant was defined as social support satisfaction score ≤ 32 .

^cEstimates were calculated using stabilized weights.

Web Table 4. Inverse-Probability-of-Treatment Weighted Estimates of the Parameters of a Marginal Structural Model for the Causal Associations of Low Social Support on Antepartum Depression in Late Pregnancy, PrOMIS, Peru, 2012-2014

Covariates	aOR	Valid Conservative 95% CI
Number of Available Support Providers (before pregnancy)		
High	Reference	
Low ^a	0.84	0.54, 1.31
Number of Available Support Providers (since being pregnant)		
High	Reference	
Low ^b	1.38	0.89, 2.14
Interaction term	1.40	0.80, 2.44
Time-independent baseline covariates		
Maternal age (years)		
18-19	1.02	0.55, 1.89
20-29	Reference	
30-34	0.92	0.65, 1.29
≥35	1.13	0.79, 1.62
Education (years)		
≤6	1.09	0.58, 2.03
7-12	1.19	0.91, 1.55
>12	Reference	
Race/ethnicity		
Mestizo	Reference	
Other	1.11	0.82, 1.49
Marital status		
Married/living with partner	Reference	
Other	1.39	0.99, 1.95
Access to basic foods		
Hard	1.51	1.16, 1.95
Not very hard	Reference	
Planned pregnancy		
Yes	Reference	
No	1.55	1.18, 2.03
Parity		

Nulliparous	Reference	
Multiparous	1.33	0.99, 1.79
Lifetime abuse		
No abuse	Reference	
Childhood abuse only	1.54	1.01, 2.34
Intimate partner violence only	2.65	1.48, 4.73
Childhood abuse and intimate partner violence	3.80	2.49, 5.80

Abbreviations: aOR, adjusted odds ratio; OR, odds ratio; CI, confidence interval

^aLow number of available support providers before pregnancy was defined as social support number score ≤ 8 .

^bLow number of available support providers since being pregnant was defined as social support number score ≤ 8 .

^cEstimates were calculated using stabilized weights.

Web Table 5. Associations Between Social Support and Antepartum Depression in Late Pregnancy, PrOMIS, Peru, 2012-2014

Social support (before pregnancy)	Social support (since being pregnant)	Marginal Structural Model		Multivariate Logistic Regression	
		aOR	95% CI	aOR	95% CI
Satisfaction with Social Support					
Low ^a	Low ^b	1.41	0.99, 1.99	1.45	1.01, 2.07
Low	High	0.88	0.57, 1.35	0.91	0.60, 1.40
High	Low	1.43	0.97, 2.10	1.51	1.03, 2.22
High	High		Reference		Reference
Number of Available Support Providers					
Low ^c	Low ^d	1.62	1.12, 2.34	1.43	0.99, 2.06
Low	High	0.84	0.54, 1.31	0.75	0.48, 1.17
High	Low	1.38	0.89, 2.14	1.39	0.90, 2.16
High	High		Reference		Reference

Abbreviations: aOR, adjusted odds ratio; CI, confidence interval

^aLow social support satisfaction before pregnancy was defined as social support satisfaction score ≤ 33 .

^bLow social support satisfaction since being pregnant was defined as social support satisfaction score ≤ 32 .

^cLow number of available support providers before pregnancy was defined as social support number score ≤ 8 .

^dLow number of available support providers since being pregnant was defined as social support number score ≤ 8 .