

Mediator / Moderator Analysis of Latino STYLE: Parent-child communication and other factors influencing the efficacy of a randomized, controlled trial of an adolescent HIV Intervention



Background

Latino adolescents face higher odds of HIV infection than their non-Hispanic counterparts in the U.S. The Latino STYLE (Strengthening Today's Youth Life Experiences) intervention is an HIV intervention targeted at Hispanic adolescents and their Spanish-speaking parents. Initial analysis of Latino STYLE data does not show a reduction in unsafe sex practices, but many factors could explain these results, including mediation of parent-adolescent communication, and moderating co-factors like gender, age at first sex, and acculturation. This study will explore these factors as they apply to the findings of the Latino STYLE intervention.

Randomization and Baseline Characteristics

Treatment Group	HIV		HP	
	n	%	n	%
	102	51%	98	49%
Gender	n	%	n	%
Male	53	52.0%	42	42.9%
Female	49	48.0%	56	57.1%
	mean [95% CI]		mean [95% CI]	
Age	15.3 [15.1, 15.5]		15.5 [15.3, 15.8]	
	% [95% CI]		% [95% CI]	
Race				
Native American / Alaskan Native	11.8% [6.6%, 19.1%]		12.2% [6.9%, 19.8%]	
Asian	2.0% [0.4%, 6.1%]		3.1% [0.9%, 7.9%]	
Black, African American, Haitian	15.7% [9.6%, 23.7%]		17.3% [10.9%, 25.7%]	
Native Hawaiian / Pacific Islander	11.8% [6.6%, 19.1%]		15.3% [9.2%, 23.4%]	
White	68.6% [59.2%, 77.0%]		67.3% [57.7%, 76.0%]	
	% [95% CI]		% [95% CI]	
Vaginal Sex Prior to Study	39.2% [30.2%, 48.9%]		36.7% [27.7%, 46.6%]	
	mean [95% CI]		mean [95% CI]	
Age When First Had Sex	14.4 [13.8, 14.9]		14.6 [14.1, 15.2]	
Stephenson Acculturation Dominant	3.4 [3.3, 3.5]		3.4 [3.3, 3.5]	
Stevenson Acculturation Ethnic	2.7 [2.6, 2.9]		2.8 [2.6, 2.9]	
Change in Miller Communication	0.5 [-3.0, 4.0]		-0.9 [-3.8, 2.0]	

Methods

Latino adolescents were randomized into the Latino STYLE or the general health promotion treatment arm, along with one parent. They participated in an audio computer-assisted self-interview (ACASI) prior to the intervention, and a second ACASI 3 months post-intervention. Differences in their risky sexual behavior were estimated by exposure (an aggregate variable including proportion of condom use and sex-avoidance) for each treatment arm. These differences were assessed using SPSS Statistics version 24 for mediation effects of parent-adolescent communication, and moderation effects of gender, age at first sex, and acculturation.

Results

Models of Mediation Analysis

Model	Main Effect	Outcome	Coeff			Model		
			Coeff	t	p-value	R Square	F (df)	p-value
1	Intervention	Exposure	2.281	0.754	0.454	0.01	0.569 (1/54)	0.454
2	Communication	Exposure	-0.269	-1.469	0.148	0.038	2.159 (1/54)	0.148
3	Intervention	Communication	-1.438	-0.651	0.518	0.008	0.424 (1/54)	0.518
4	Intervention	Exposure	1.909	0.634	0.529	0.046	1.269 (2/53)	0.29
	Communication		-0.259	-1.399	0.168			

Models of Moderation Analysis

Model	Main Effect	Coeff	Coeff			Model		
			t	p-value	R Square	F (df)	p-value	
1	Intervention	2.281	0.754	0.454	0.01	0.569 (1/54)	0.454	
2A	Gender	2.287	0.764	0.448	0.011	0.583 (1/54)	0.448	
2B	Age at First Vaginal Sex	1.075	1.231	0.224	0.029	1.515 (1/51)	0.224	
2C	Dominant Culture	4.141	1.044	0.301	0.02	1.09 (1/54)	0.301	
2D	Ethnic Culture	-8.927	-4.628	<0.001*	0.284	21.416 (1/54)	<0.001*	
3	Intervention	5.197	0.759	0.451	0.304	7.569 (3/52)	<0.001*	
	Ethnic Culture	-8.175	-2.506	0.015*				
	Intervention*Ethnic Culture	-1.384	-0.341	0.735				

Conclusions

The two interventions did not differ in their level of communication change between Latino adolescents and their parents, and between the two intervention groups there was no major difference in exposure. Higher ethnic-culture acculturation reduced risky sexual behavior, which may reflect the tendency of more recent immigrants to have better health outcomes known as the "Immigrant Paradox." A study with more sexually-active adolescents could elucidate the insignificant differences in risky sexual behavior found in this study.

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