Rural/ urban differences in the association between indigenous origin and adolescent pregnancy in Bolivia

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INTRODUCTION

Bolivia, an ethnically diverse country (40% of its population self-identify as indigenous), has one of the highest rates of adolescent pregnancy in the Americas. Previous evidence has identified those from indigenous origin and living in rural areas as the most-at-risk groups. However, an economic boom and rising rural-urban migration has changed Bolivia's demographic landscape, and new evidence is needed to identify those at highest risk.

AIMS

The aims of this study are twofold:

- To explore the association between indigenous origin and adolescent pregnancy/motherhood in Bolivia.
- To determine if the association between adolescent pregnancy/motherhood and indigenous origin varies by area of residence.

METHODS

Data and participants

Data comes from Bolivia's national-level Demographic Health Survey, 2016. In total, 2,871 female adolescents (14-19 years old) completed the survey.

Measures

Table 1. Measures used in this study

Outcome	Adolescent pregnancy/motherhood, 14-19-year-olds who have delivered a child and/or have ever been pregnant.
Independent variables	Indigenous origin, as measured by mother tonge and distinguishing between Aymaras/Quechuas and other indigenous groups. Area of residence, rural versus urban areas.
Control variables	Age, highest level of education achieved, receipt of sex education, access to media, female headed household (hh), number of hh members, hh wealth quintile, and department/ region

METHODS I

Analysis

- A probit model is used to study the association of interest.
- Differences in the above association by area of residence are analyzed using an interaction term.
- Adolescent pregnancy is only observed among sexually active girls; therefore, a two-stage Heckman model is used to test for selectivity.
- The sample design of the survey is considered in the analysis.
- Results are presented as marginal effects and as predicted probabilities (pp).

RESULTS

Sample characteristics

Table 2. Sample statistics based on indigenous origin and area of residence

Area of residence	Indigenous origin	Weighted %	Sample size
Urban	None	63.7	1,595
	Quechua/ Aymara	5.3	179
	Other indigenous	0.4	10
Rural	None	15.7	617
	Quechua/ Aymara	14.2	420
	Other indigenous	0.6	50
TOTAL female adolescents		100	2,871

Heckman selection model

There is no correlation between the error terms of the two equations. It is appropriate to refer to the coefficient values of the uncorrected probit regression model.

Probit regression results

Regression results are presented in Table 3. Aymara/Quechua adolescents are 6.5 percentage points more likely to become pregnant when compared to girls of no indigenous origin.

Probit regression results by area of residence

The interaction term was significant (not shown in the poster). However, predicted probabilities (pp) by indigenous descent and area of residence are presented in Figure 1.

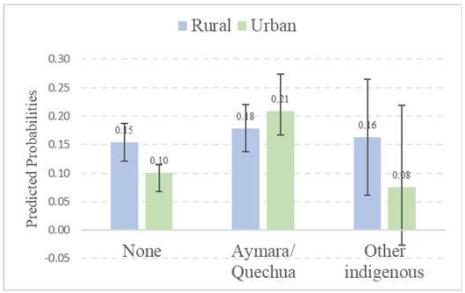
RESULTS I

Table 3. Probit regression results as marginal effects, all variables

	Probit	Heckman's two-stage probit	
	(A) Pregnant/ Mother	(B) Sexually active	(C) Pregnant/ Mother
Urban area	0.003	-0.019	0.102**
Indigenous origin (ref=None)			
Quechua/ Aymara	0.065***	0.028	0.150**
Other indigenous	-0.017	-0.104**	0.200**
Age	0.067***	0.102***	0.030
Max level of education	-0.007*	-0.014***	-0.001
Received sex education (ref=No)			
Yes, at home or from friends	-0.029	-0.042	0.021
Yes, at school	-0.066*	-0.076	-0.035
Yes, health facility	0.252***	0.204**	0.256*
Number of media exposed to	-0.048***	-0.047***	-0.076**
Female-headed household	-0.073***	-0.030	-0.189**
Members in the household	-0.008**	-0.017***	0.012
Household wealth quintiles	-0.014**	0.000	-0.054**
Department (ref=Chuquisaca)			
La Paz	0.007	-0.072**	0.239***
Cochabamba	0.012	-0.055	0.137
Oruro	0.007	-0.047	0.151
Potosi	0.002	-0.068*	0.169*
Tarija	0.073**	0.026	0.200**
Santa Cruz	0.088***	0.040	0.127
Beni	0.118***	0.040	0.129
Pando	0.131***	0.051	0.120
Women who started sex before 18 (psu level)		0.270***	
ρ			-0.454
Observations (unweighted)	2,871	783 Selected; 2,086 Nonselected	

*** p<0.01, ** p<0.05, * p<0.1
Wald test of indep. eqns. (rho = 0) Prob > chi2 = 0.1735

Figure 1. Predicted probabilities of being pregnant during adolescence by indigenous origin and area of residence



- Significant differences between rural and urban areas among non-indigenous girls only.
- Significant differences between non-indigenous and Aymara/Quechua girls in urban areas only (pp Aymara/Quechua=19, pp non-indigenous=10)

CONCLUSIONS

- Non-indigenous girls face a lower probability of becoming pregnant in urban rather than rural areas.
- However, Aymara/Quechua girls face the same probability of pregnancy in urban and rural areas.
- In urban areas only, Aymara/Quechua girls are at higher risk of pregnancy when compared to non-indigenous girls.
- Urban areas have higher availability of education, health, and information services; however, Aymara/Quechua girls might not be benefiting from these services.
- Despite that Aymara/Quechua girls in urban areas are a minority (5% of the total female adolescent population); each case of adolescent childbearing represents a situation of severe vulnerability.
- Access to media channels and hh wealth are protective factors against adolescent childbearing.
- Suggestive evidence that sex education at schools protect girls from pregnancy.
- Sex education at health facilities is positively associated with childbearing, probably showing that adolescents only attend health services when already

RECOMMENDATIONS

There is a historical need to talk about the needs and challenges that Aymara/Quechua girls face in urban areas of Bolivia.

- The provision of social, education, and health services in urban areas need to be more equitable and consider the vulnerable state and cultural needs of indigenous girls.
- Access to media and contraceptive information on media channels needs to be universal.
- Culturally sensitive sex education should be a required component of all public and private schools' curriculums.
- Further qualitative research is needed to understand the protective role of having a female-headed household on adolescent childbearing.
- Further research is needed to analyze the cultural and structural reasons behind the strong regional differences in adolescent childbearing.

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