

THE ASSOCIATION BETWEEN EARLY CHILDHOOD EDUCATION OF 3-5 YEAR OLDS AND MATERNAL MARITAL STATUS IN MEXICO, 2010

LA ASOCIACIÓN ENTRE LA EDUCACIÓN INICIAL DE NIÑOS DE 3 A 5 AÑOS Y EL ESTATUS MARITAL MATERNO EN MÉXICO, 2010

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Cómo citar / citation

Vargas, E. y Martínez, G. (2019) "The association between early childhood education of 3-5 year olds and maternal marital status in Mexico". *OBETS. Revista de Ciencias Sociales*, 14(2): 529-550.
doi: 10.14198/OBETS2019.14.2.09

Abstract

This paper examines the association between preschool enrolment of 3-5 year olds and maternal marital status in Mexico and determines how this association varies by maternal education and socioeconomic status. Based on microdata from the 2010 Mexican census, we used descriptive statistics and random-effect logistic models for this analysis. Children of single, separated or cohabiting mothers have lower preschool enrolment rates than children of married mothers. However, for children of highly-educated mothers, these disadvantages are slightly reduced, and reversed for children of divorced mothers,

except for children of cohabiting mothers, whose lower preschool enrolment persist across social groups.

Key words: schooling, children, marital status, educational level.

Resumen

Se analiza la asociación entre la asistencia al preescolar de niños de 3 a 5 años y el estatus marital materno en México y se determina cómo esta asociación varía por nivel de educación y estatus socioeconómico de la madre. Con base en los microdatos del censo mexicano 2010, se emplea estadística descriptiva y modelos de efectos aleatorios. Los niños de las mujeres solteras, separadas y en cohabitación presentan menor asistencia escolar que los niños de las mujeres casadas. Sin embargo, para los niños de madres con altos niveles educativos estas desventajas disminuyen, o revierten para aquellos con madres divorciadas, excepto para aquellos con madres en cohabitación.

Palabras clave: escolarización, niños, estatus marital, nivel educativo.

INTRODUCTION

The marital status of the Mexican population has experienced noteworthy transformations in the last three decades. In 1990, 40.6% of the population aged 12 and older was single, 45.8% married, 7.4% cohabitating –living with a partner without a legal or religious bond– and 3.1% divorced/separated (Inegi, 1990). In 2010, marital status showed great variations: single and married populations decreased to 35.2% and 40.5% respectively, while people cohabitating increased to 14.2% and divorced/separated to 5.2%. As we may observe, cohabitation rose 95% and divorced/separated, 168% (Inegi, 2011).

In addition, the composition of women of diverse marital statuses also changed. While cohabitation had been more concentrated amongst less-educated women, cohabitation become more popular, in particular among those with higher education levels; therefore, the phenomenon turned out to be visible amongst women of all levels of education (Pérez & Esteve, 2012). Moreover, cohabiting was not an impediment to having children. Mexican women living in cohabitation had a comparable number of children to married women during the first five years of marriage: the most important years for starting a family in this country (Solís, 2013). In addition, the number of educated mothers without partners has also increased, especially those in dissolution (separated or divorced), most of whom have higher education levels and premarital labour force participation (Ojeda & González, 2008).

Recent changes in marital status in western countries, including Latin America, have been understood as the result of a higher appreciation of individual autonomy against conjugal altruism or the authority of civil and religious institutions, what has been identified as the second demographic transition (Lesthaeghe, 1995; Esteve, Lesthaeghe & López-Gay, 2012). This transition depicts a progression toward fewer marriages and children, and greater couple instability, due to a change in family values, from traditional views of family life to more individualistic life-styles, which could not be accomplished by acquiring long-term family commitments (Esping-Andersen & Billari, 2015).

However, the increase in cohabitation has also responded to economic factors, such as the effects of the formal employment crisis among less-skilled populations (Wilcox & Cherlin, 2011). In the case of Latin America, the growth in cohabitation is complex, since along with contemporary cultural and economic incentives to cohabit, historical forms of union persist (Esteve, Lesthaeghe & López-Gay, 2012). Consensual unions exist as a traditional practice due to the lack of economic resources for weddings and cultural conventions among communities in situations of precarity while other types of cohabitation emerge as modern practices.

The aim of this paper is to analyse the association between maternal marital status and preschool attendance of children in Mexico, which is an indicator of children's wellbeing and adequate development (United Nations Educational, Scientific and Cultural Organization, 2010). The paper examines if the children of separated, divorced, single or cohabiting mothers have the same opportunities with respect to early education than those of married mothers, and what kind of mechanisms could explain these differences if they exist. In particular, we explored whether this association was due to the mother's educational or socioeconomic background.

Little is known of how marital status influences early childhood education in developing countries. In 2000, Rodríguez (2005) found disadvantages in school enrolment and age-grade gaps in Latin American children (including Mexican children) aged 10 with mothers living in cohabitation, compared to those with married mothers. In other Latin American countries such as Colombia (Ribero, 2001), lower rates of schooling in children of separated, divorced or cohabiting mothers, compared to children of married women, have also been found. Nevertheless, there is no recent research on the subject, despite the fact that cohabitation, divorce and separation have considerably expanded and their nature has changed over the 21st century.

Early childhood education is critical for future children's schooling and social development, as well as reducing educational inequalities over their life course (UNESCO, 2010). In 1990, the United Nations Convention on the

Rights of the Child acknowledged that every child has a series of rights that guarantee his or her integrity, including the right to education. The same year, the World Declaration on Education for All recognized the need to promote early childhood education.

In Mexico, preschool education was not compulsory until 2002, when a federal decree aimed at modifying Article 3 of the Constitution was issued (SEP, 2004). The plan was to make the third grade of preschool mandatory beginning the 2004-2005 academic year, the second grade in 2005-2006 and the first grade in the 2008-2009 academic year. However, the application of this policy was postponed for first grade (Pérez et al., 2010). Therefore, preschool education coverage is far from what was planned and currently, second and third grades of preschool are mandatory, but only the third grade of preschool is really required to access elementary education. According to administrative statistics from the Public Education Ministry (SEP, 2014), during the 2013-2014 academic year, 40% of 3 year-olds, 89% of 4 year-olds and 85% of 5 year-olds attended preschool. Overall, attendance to preschool in México was 78% while attendance to elementary education was 98% (INEE, 2018).

In addition, access to preschool education in Mexico is limited and unequal. The majority of preschools are public, 83.6% (INEE, 2018), and very diverse. There are different types of preschools: 66.9% are General schools, mostly in urban but also in rural contexts; 20.9% are Communitarian, schools that educate children living in small, scatter and rural localities or residing in agricultural fields with their migrant parents; and 11% are Indigenous, schools in communities with important presence of indigenous population. These segmentation of preschool education is associated with an uneven quality of services. For instance, Indigenous and Communitarian preschools tend to have inadequate infrastructure and be unitarian; one professor teaches all grades, usually all grades are mixed in one group. In addition, it is common that these preschools have unskilled professors, without tertiary education or able to speak in the indigenous language of the community (INEE, 2017).

Moreover, schedules of preschools are short in Mexico, children only go to public preschools three hours per day (fifteen hours per week) and child-care services are not integrated to preschool curricula, which may impede the initial education of children of working mothers. For instance, in states such as Chihuahua, with high female economic participation (Inegi, 2018), only two thirds of 3-5 year olds attend preschool, while in Tabasco a state with a very low female economic participation, preschool attendance reaches 86% (INEE, 2018).

THEORETICAL FRAMEWORK

Marriage has declined in several western societies while cohabitation, divorce or separation and the number of children born out of wedlock have risen as a result of the transformation in family values toward “less-family”, called second demographic transition as stated above (Lesthaeghe, 1995; Esping & Billari, 2015). A set of cultural and social changes were associated with these transformations, such as the rise in secularism, the lower perceived stigma of sexual activity and births out of wedlock, and the reinforcement of laws that protect the bond between parents and children regardless of the conjugal status of parents (Popenoe, 2008; Wilcox & Cherlin, 2011; Sørensen, 2005; Esping & Billari, 2015).

A great deal of literature points out the limitations of children who live with parents in consensual relationships, compared to those whose parents are married. Children who live with two biological married parents enjoy better educational, social, cognitive, behavioural and attitudinal outcomes than those who live with two biological parents in cohabitation or without one or both of their parents (Manning & Lamb, 2003; Brown, 2004; Popenoe, 2008).

Researchers have found some mechanisms through which cohabitation may affect the wellbeing of children, such as the household’s economic conditions, the mental health of parents, the absence of a biological father at home, the stability of conjugal relationships and the quality of parenting (Brown, 2004; McLanahan, 2004; Manning & Lichter, 1996). In particular, some authors agree that consensual relationships are less stable or long-lasting due to the couples’ lower level of commitment to the family’s wellbeing and less defined family roles, rules and obligations, compared to couples in marriage (Brown, 2004; McLanahan & Sawhill, 2015; García-Méndez, Rivera-Aragón, Díaz-Loving & Reyes-Lagunes, 2015).

Nevertheless, other authors argue that it is unclear whether the supposed advantages enjoyed by children living with married parents are intrinsic to marriage or if they are related to selectivity bias in the individuals who get married, rather than the type of union (Brown, 2004; Waldfogel, Craigie & Brooks-Gunn, 2010; McLanahan & Sawhill, 2015). In other words, they argue that more committed, secure, happier and healthier couples get married, which in turn benefits children’s wellbeing.

The mechanisms that mediate the effects of living with divorced or separated mothers on children’s wellbeing include economic deprivation and the social and emotional instability associated with the parental separation process (Hanson, McLanahan & Thomson, 1998). The presence of both parents provides better access to financial resources, especially when both parents work, and social capital at home. In turn, investments of time, social sup-

port, networks and the provision of information from both parents may favour the creation of human capital (Coleman, 1988). Finally, the presence of both parents may provide children with an environment of psychological and emotional stability as both are sources of support, security and guidance (Hanson, McLanahan & Thomson, 1998). Therefore, as family dissolution has grown as a result of the second demographic transition, socioeconomic wellbeing has become more difficult for an increasing proportion of children (Sørensen, 2005).

However, divorce or separation is not always detrimental. Qualitative studies have proven that Mexican women who have been through a difficult marriage experience emotional well-being after divorce, and they adjust to their economic situation through the labour force participation of other household members or through the social and economic support of extended family (Chant, 1999; González, 1999). In addition, in contexts of gender inequality as found in most impoverished communities in Mexico, after their breakup some mothers prioritize the education of their daughters without having to fight opposition from their partners, who are more likely to uphold a traditional perspective on gender roles (Chant, 1999).

Women who were in cohabitation and become separated may experience a more severe loss of economic and social support, because of the scarce legal resources to enforce their ex-partner's responsibility with respect to their children's expenses and needs, and also because women may feel they do not have the right to claim anything since there was no legal bond of marriage. In Mexico, many women separated from a consensual union prefer to take on the whole responsibility of their children and ask other family members for help, instead of appealing for any support from the fathers (Zamorano, 2003; Zamorano, 2006).

Single mothers may also experience a lack of economic support from their ex-partners, but since they are younger, they frequently seek to co-reside with their parents (in our sample, 70% live in extended households). Co-residence is a way for them to reduce the cost of living and receive support in caring for their children (Jiménez, 2003; Zamorano, 2003; Zamorano, 2006; Soria, Zozaya & Mendoza, 2002). Thus, co-residence of children with grandparents may be a source of economic aid, especially in countries where public transfers for the elderly exist (Pérez, Turra & Quiroez, 2007), as well as supervision and social integration for the children of single mothers.

Working hypotheses

The first hypothesis of this study was that the children of single, separated or cohabiting women were less likely to attend preschool than children of

married women, because unmarried mothers have less access to economic resources and social capital, which could be used to benefit their children's early education.

The second hypothesis was that the high socioeconomic and education levels of married mothers could explain the advantage in their children's preschool enrolment since unmarried mothers continue to be overrepresented in the lower class and educational strata. Thus, it was assumed that the negative influence of not being married would disappear as maternal education and socioeconomic levels increased. Conversely, children of more socially disadvantaged mothers would be less likely to attend preschool, because of the lack of economic resources and time to take children to preschool, as well as the lower value placed on early childhood education in impoverished settings. In Mexico, maternal level of education has been positively linked with a greater emphasis on children's interaction with education systems (LeVine *et al.*, 1991).

METHODOLOGY

Sample and data

Information was taken from the 2010 Mexican Population and Household Census microdata (*Instituto Nacional de Geografía y Estadística*, 2011). The census microdata is representative at the national, state and municipality levels, and covers 10% of the Mexican population. The study was limited to children aged 3 to 5 at the time of interview (June 2010), whose mothers were identified and able to offer information on the variables of interest. Children must turn three during the calendar year to be eligible for entry to preschool every August, but the census does not collect calendar birth years of all children, only their ages. The census month was June. Therefore, we included all 3 year-olds, but we assumed that half of them met this requirement and the other half turned 3 during 2010 and would not be eligible for preschool until the following academic year.

The analyses were based on a sub-sample of 641,230 children, which we arrived at after deleting cases due to the following selection criteria: 1) had omitted information in the survey; 2) did not match to the mothers' identifiers; and 3) maternal marital status did not correspond to the living arrangement with the biological father. Deletion of cases without information on mothers' or children's characteristics reduced the sample by 7.5%. In addition, only 95.5% of children could be linked to their mothers' identifiers. Finally, for the purposes of consistency and to facilitate the interpretation

of results, we ensured that marital status referred to the living arrangements of mothers with the biological fathers of their children. Children who were living with married or cohabiting mothers but did not have their biological fathers at home, and children who were living with separated, divorced or single mothers but had co-residing fathers or stepfathers were omitted from further analysis. These cases represented about 4% of the original sample.

Methods of estimation

To fulfil the study goals, descriptive statistics and multivariate regression analysis were employed. Means and frequencies were used to describe the characteristics of the study sample. The differences in preschool enrolment according to marital status, socioeconomic status and level of education were confirmed with Chi-square tests.

Afterwards, a set of logistic regression models were used to analyse the association between maternal marital status and preschool enrolment, introducing random effects on the intercept at the municipal level (Raudesnbush & Bryk, 2002). The purpose of this specification was to control for the between-municipalities heterogeneity in preschool enrolment linked to the structure of opportunities in the places of residence, beyond individual or maternal socioeconomic and demographic predictors. The proportion of variance in school enrolment only attributable to between-municipality differences varied between 6% and 8%, and it was statistically significant from zero. Therefore, a hierarchical regression analysis was appropriate in order to take this heterogeneity into account in the estimation of the regression parameters and their standard errors. The analysis was performed using Stata and an independent variance-covariance structure was assumed by default.

Variables of analysis

We selected the preschool enrolment of the child as the dependent variable with 1 for enrolment and 0 for non-enrolment. Preschool enrolment may include those children who are in nurseries with integrated preschool education and children attending public or private preschools. Unfortunately, the census questionnaire does not solicit the type of school. Table 1 describes the distribution of the sample by selected explanatory and control variables. The school enrolment rate for the population aged 3-5 was 54% in 2010: 16% for 3 year-olds, 56.4% for 4 year-olds and 88.2% for 5 year-olds.

Children were categorized by maternal marital status, which included four categories: married (by religious marriage, legal marriage or both), living

in cohabitation, divorced, and finally, another category was created for single, separated and widowed women. For simplicity purposes, these children without fathers were grouped, since the schooling profiles of children of separated and widowed mothers were similar to those of single mothers. However, children of divorced mothers were kept separate from the other children of mothers without partners because the former displayed contrasting schooling profiles. More than half of children were living with married mothers (57%), 3 out of 10 were living with cohabiting mothers, 1.1% were residing with divorced mothers and 12.3% were living with mothers who were not living with a partner, single, widowed or separated (Table 2).

The variables considered as mediators in the association between marital status and preschool enrolment were the mother's level of education and the household's socioeconomic status. The educational level was classified as basic (0-8 years of education), middle school or incomplete high school (9-11 years), high school (12 years) and at least a year of college (13 years or more). Women's level of education is low in Mexico. Only 27% of the mothers of these children completed middle school, 14% finished high school and 13% had university studies or more (Table 2).

Socioeconomic status was measured with an index based on durable goods and overcrowding in households, which was defined as having more than 2 members sleeping in the same bedroom. The index construction consisted of a factorial analysis of principal components, based on one unique factor that explained 46% of the total variance of the 7 variables: overcrowded housing, washing machine, refrigerator, landline telephone, computer, Internet and car. Four strata were created from this index with approximately one quarter of the cases in each stratum (Table 2).

The control variables at the individual level were sex, age, having a disability, migration, number of siblings and the type of household. It was assumed that children would have less chance of attending school at a lower age if they were disabled, non-native and had more siblings. Prior research on school enrolment of Mexican children has found strong associations with these variables (Binder & Woodruff, 2002; Vargas & Camacho, 2015).

Regarding the type of household, the study distinguished between nuclear, extended and composite households (INEGI, 2011). Nuclear households included only the mother and/or father with children. The extended household added other family members, and the composite household, non-family members. It was expected that we would find greater enrolment of children within nuclear households, as documented in other studies (Giorguli, 2002), because other members may compete for the household's financial and social resources. However, it was recognized that within specific contexts an extended household may help to buffer the disadvantages that

children may experience as a result of paternal absence (Fomby & Cherlin, 2007). In this way, the interaction between household structure and marital status was tested (not shown but available upon request), but did not confirm this hypothesis.

The control variables linked to the mother's socioeconomic and demographic profile were age, the relationship with the head of the household, indigenous language, number of hours worked, and the urban/rural composition of localities. It was assumed that younger mothers, female heads of household or spouses, as compared to daughters or daughters-in-law, non-indigenous language speakers, mothers working full time or more hours, and urban residents would display a higher propensity to take their children to school. It is possible that mothers with more experience and greater autonomy regarding finances and decision-making may mobilize resources for their children's benefit, as proven by government cash transfer programs to promote social development, and as found in previous studies regarding female headship (Attanasio *et al.*, 1998; Giorguli, 2002). In addition, mothers in urban areas and non-indigenous mothers may be more likely to live in areas with preschool facilities, and which place a greater cultural value on early childhood education.

RESULTS

School enrolment differentials by marital status

School enrolment frequencies of children aged 3 to 5 by maternal marital status are shown in Table 1. Children whose mothers lived in cohabitation or were single or separated exhibited lower preschool enrolment rates than children with married mothers, 46.7% and 52% versus 57.7% respectively. Surprisingly, 67% of the children of divorced mothers attended preschool, approximately 10 percentage points more than those of married women.

One explanation for this advantage might be the positive economic and educational selectivity of women who are divorced and the negative selectivity of women who are living in cohabitation. We estimated school attendance frequencies by marital status according to maternal socioeconomic and educational levels (Table 1). As expected, children's school enrolment increases as the mother's socioeconomic status and level of education rise (Table 1). However, at each socioeconomic stratum and level of education, the advantage in the school enrolment of children with divorced mothers over the enrolment of children of married women remained, as did the lower enrolment of children with single, separated or cohabiting mothers. Further on we estimated interactions between marital status and level of education or socioeco-

conomic status in the multivariate models to test if these differences hold after taking individual and maternal characteristics into account and we comment on the results below (Figures 1 and 2).

Table 1. Preschool enrolment frequencies according to maternal marital status, total and by socioeconomic status and educational level (n=641,230). Mexico, 2010

Socioeconomic variables	Maternal marital status				Total
	Married	Cohabiting	Divorced	Single or separated	
TOTAL*	57.7	46.3	66.8	51.9	53.8
BY SOCIOECONOMIC STATUS					
Very low*	50.1	40.7	57.8	44.4	45.7
Low*	54.0	47.3	62.8	50.2	51.5
Middle*	56.3	48.8	59.9	52.6	54.0
High*	68.5	59.7	74.1	63.4	66.5
BY YEARS OF SCHOOLING					
0-8 years*	50.9	41.3	53.6	41.9	46.4
9-11 years*	55.8	47.5	58.5	51.7	52.8
12 years*	61.7	54.3	71.5	59.7	60.0
13 years or more*	72.3	66.0	78.3	68.2	71.1
n	365,993	202,328	4,140	68,769	641,230

Source: Own estimates based on the Population Census sample, 2010 (INEGI, 2011).

* Differences by marital status significant (Pearson chi2, Pr=0).

Multivariate statistical analysis

In Table 2, we display the odds ratios of preschool enrolment from the multivariate logistic models. Model A indicates that the odds of preschool enrolment for children of cohabiting mothers were 28% lower and the odds for single or separated women's children were 17% lower than those of children with married mothers. In contrast, the odds of school enrolment for children of divorced mothers were 30% higher than the odds of children of married mothers. When introducing the children's demographic variables into model B, disadvantages increased for children whose mothers live in cohabitation or

are single or separated, and the benefits for children of divorced women were reduced, in comparison to those of married mothers.

Table 2: Odds ratios of preschool enrolment of 3-to 5-year olds by maternal marital status in Mexico, 2010

Independent variables	Mean	Model A		Model B		Model C	
		OR	p> z	OR	p> z	OR	p> z
<i>Explanatory</i>							
Maternal marital status (Married)	0.58						
Cohabiting	0.29	0.72 ***		0.67 ***		0.81 ***	
Divorced	0.01	1.30 ***		1.18 ***		1.09	
Single/Separated	0.13	0.83 ***		0.74 ***		0.87 ***	
<i>Individual</i>							
Gender (Female)	0.49						
Male	0.51			0.94 ***		0.93 ***	
Age	4.01			6.71 ***		7.09 ***	
Disability (No)	0.98						
Yes	0.02			0.67 ***		0.68 ***	
Migrant (No)	0.90						
Yes	0.10			1.05 ***		0.96 **	
Number of siblings (0)	0.17						
1	0.35			0.94 ***		0.99	
2	0.26			0.79 ***		0.89 **	
3 or more	0.23			0.51 ***		0.63 **	
<i>Maternal variables</i>							
Age (<30)	0.49						
30-39	0.42					1.07 ***	
>=40	0.09					1.07 ***	
Indigenous language	0.91						
Yes	0.09					1.11 ***	
Schooling (0-8)	0.39						
9-11	0.34					1.47 ***	
12	0.14					1.80 ***	
>=13	0.13					2.73 ***	

Independent variables	Mean	Model A		Model B		Model C	
		OR	p> z	OR	p> z	OR	p> z
Socioeconomic status (Very low)	0.31						
Low	0.22					1.38	***
Middle	0.24					1.58	***
High	0.24					2.20	***
Employed (No)	0.66						
<=20 hrs	0.07					1.17	***
>20 to <=40 hrs	0.11					1.15	***
40 or more hrs	0.15					1.02	*
Kinship (Wife)	0.71						
Head of the household	0.07					1.03	*
Daughter-in-law/daughter/other	0.21					0.86	***
Household structure (nuclear)	0.68						
Extended	0.29					0.92	***
Composite	0.03					0.94	**
Urban locality (No)	0.26						
Yes	0.74					1.42	***
Log-likelihood		-428769		-307659		-293949	
Rho		6.8%		14.4%		16.0%	***

OR, odds ratios; ***p<.001, **p<.01, *p<.05 ; reference category in parenthesis.

Source: Own estimates based on the Population Census sample, 2010 (INEGI, 2011).

Regarding individual variables, girls showed higher odds of attending school than boys, as did those who are older and have up to one sibling (Table 2). There is a higher investment in girls' preschool education than that of boys, which is surprising at these ages, and it would be interesting to examine how early education may be playing a role in gender inequalities later in life. Mexican girls show gains over males in postgraduate education (Angeles, 2016). In addition, having two or more siblings reduced preschool enrolment. This reveals the serious economic and time challenges that Mexican families with more than 2 children are facing to provide them with schooling. Since preschool is not mandatory, taking children to school at other educational levels may be the priority. Finally, children's health and geographic mobility also have an impact on school enrolment. Boys and girls with a disability or from migrant backgrounds show lower odds of school enrolment than those with none of these characteristics.

Model C (Table 2) took the maternal socioeconomic characteristics into consideration. Differentials in school attendance by marital status decreased, which implies that socioeconomic conditions influence whether or not children of women who are not married have access to schooling. In this model (C), the odds of school attendance for a child with a cohabiting mother were only 19% lower, and for children of single or separated women odds were 13% lower than for children of married mothers. Yet the significance of the divorced category disappeared. This might be related to the fact that divorced mothers are concentrated among more educated women and tend to live in urban localities (9 out of 10), which generally have a wider supply of pre-schools and day care services.

Most control variables showed a significant statistical relationship with children's school enrolment (Model C). The children who displayed higher odds of attending school were those of mothers with the following characteristics: over 30 years old, with higher socioeconomic and educational levels, who work less than 20 hours (compared to those who were not employed), indigenous language speakers, heads of their households (in comparison to those who are spouses), who live in nuclear homes and reside in urban areas. These associations indicate that inequalities in origin have an important effect on access to early childhood education. On the contrary, children of mothers who are daughters-in-law, daughters, or have any other kinship with the head of the household, in comparison to spouses, and those who live in extended and composite households, as opposed to nuclear households, exhibited lower odds of attending preschool, as we hypothesized.

The fact that speaking an indigenous language had a positive relationship to school enrolment is surprising. Although, in a bivariate relationship, indigenous mothers are less likely to enrol their children at a preschool, once between-municipalities heterogeneity was introduced into the model, by using the random-effect specification, a change was registered in the direction of this association from negative to positive (this step is not shown but is available upon request). Therefore, if indigenous mothers lived in a typical Mexican municipality, they would have a greater chance of taking their children to preschool than their non-indigenous counterparts. However, this is not the case. Indigenous people are settled in highly marginalised areas that lack education, public services and household assets (CONAPO, 2012; Téllez, Ruiz, Velázquez y López, 2013); only nine of the 15,385 localities with indigenous population were classified as of low and very low marginality (CONAPO, 2012).

Finally, we illustrate the interactions of maternal marital status with the socioeconomic and educational levels derived from model C (Figures 1 and

2). The results indicate that children of cohabiting mothers display lower school enrolment across all socioeconomic strata and all levels of education; these disadvantages are slightly higher among children from very low educational and socioeconomic levels.

Other marital statuses displayed mixed results. Children of divorced mothers exhibited odds of school enrolment higher than those of children of married mothers only if mothers had a high socioeconomic status or a high school education or more (12 or more years of schooling), after individual and maternal control variables and random errors were taken into account. This may be related to their economic resources and the importance these mothers place on institutions for the care of children. On the other hand, the enrolment gap between children of single or separated mothers and children of married mothers was slightly reduced as the mother's level of education increased. In this case, the mother's level of education protects children from the possible adverse effects on early education from not living with a father.

Figure 1. Adjusted odds ratios of preschool enrolment by maternal marital status according to socioeconomic status. Mexico, 2010

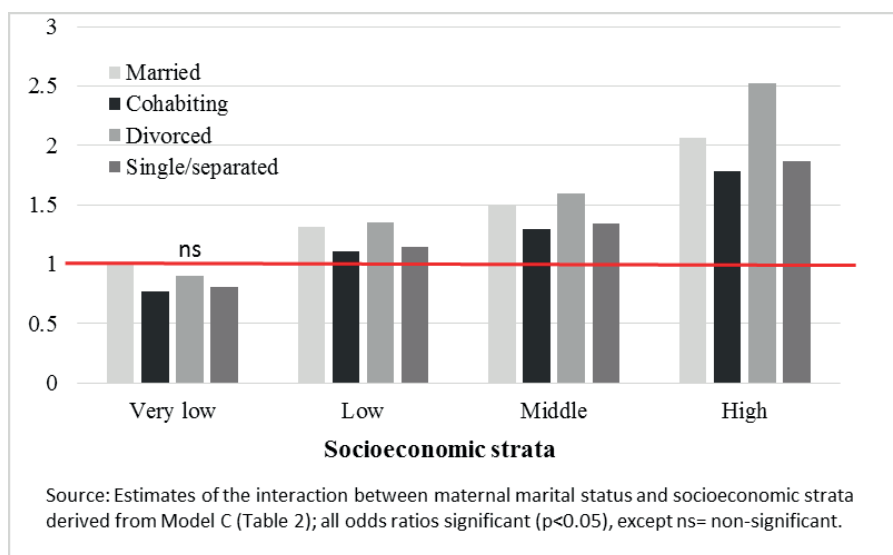
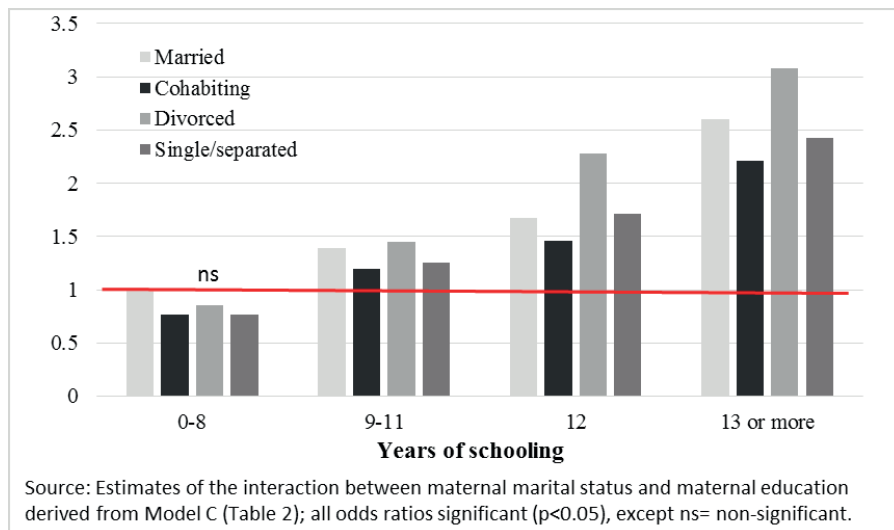


Figure 2. Adjusted odds ratios of preschool enrolment by maternal marital status according to maternal years of schooling. Mexico, 2010



DISCUSSION AND CONCLUSIONS

The results presented above showed that children of cohabiting mothers and of single or separated mothers exhibit lower frequencies of preschool enrolment than children of married women. The lower enrolment is consistent even when we account for individual and maternal socioeconomic variables and random effects by municipality. Contrary to our hypotheses, the socioeconomic heterogeneity of mothers only partially explain the relationship between marital status and early school enrolment at an individual level. Although causality cannot be established in cross-sectional research, our results strongly suggest that not only the absence of the father, but also the cohabitation of two biological parents may affect investment in early childhood education.

These findings are similar to results of previous studies that provide evidence of clear negative effects of consensual unions or the absence of fathers on diverse wellbeing outcomes of children (Manning & Lamb, 2003; Brown, 2004; Popenoe, 2008; Wilcox & Cherlin, 2011). On the one hand, beyond socioeconomic resources, the association between paternal absence and children's wellbeing may be explained by lower paternal resources, that is, lower supervision, monitoring and social and emotional support for children's education. The presence of the father may help to reduce the mother's

responsibilities, depression and stress, and increase parenting effectiveness. On the other hand, and in addition to socioeconomic factors, the association between cohabitation and lower child wellbeing has been explained by the stress linked to the uncertainty of the future of the union and relationship instability, which also leads to maternal depression and diminished parenting effectiveness. Another common explanation is the incomplete institutionalization of the romantic relationship, which may lead to a lack of clarity regarding family roles, rights and obligations. In addition, cohabiting may be linked to a lower value placed on formal early childhood education in Mexico, because it implies parental involvement with institutions.

Our research also exhibited the protecting role of maternal education and socioeconomic status against children's risks of not attending preschool when the father is absent. Results showed that when single or separated mothers have completed high school education or higher levels, the enrolment of their children is slightly closer to the enrolment of children of married mothers. Moreover, children of divorced women with higher levels of education or socioeconomic status were even more likely to attend preschool than children of married mothers.

The fact that children of divorced mothers of high socioeconomic status have a higher preschool enrolment rate is striking. This finding may imply that a higher economic level and value placed on education in highly-educated divorced mothers may enable these mothers to obtain additional support and fulfil their objectives for their children's education, while they work to support their households. For instance, they may be able to invest more in care services for their children, such as paying for a kindergarten with day care included or private caregivers who are able to pick children up from school and provide them personal care. In addition to greater resources, divorced women may be a selected population that is more respectful of institutions as shown by the fact that they went through the legal procedures to marry and then separate from their partners.

In Latin America, early education plays a fundamental role in reducing disparities and facilitating access to learning opportunities, due to the deep social and economic inequalities that characterize the region (UNESCO, 2010). Therefore, the lower preschool enrolment of children whose mothers live in cohabitation or are single or separated may be an important aspect to consider in policy making aimed at reducing child vulnerability. These children should be included in programs focused on improving access to education and promoting the value of early education as a right of children.

Because random effects were significant, it is important to note that there is also a deep inequality in state provision of early childhood education in Mexico; therefore, more investment in educational infrastructure at

this level is necessary to increase preschool enrolment. Having a preschool facility nearby could mean an opportunity to improve future life opportunities for socioeconomic development in children from marginalized populations (Vargas & Marín, 2002; Pérez *et al.*, 2010).

Studies on parental marital status and children's schooling are scarce in Mexico, but this variable, beyond the living arrangement, is highly associated with children's wellbeing. This study suggests that the stability and socioeconomic selection of conjugal relationships are associated with parents' investment in schooling. On the one hand, the absence of a father may be negative for early childhood education only if the mother is single or separated, but not necessary if the mother is divorced. Children of divorced mothers may be benefited by their socioeconomic status, which in turn may favour childcare arrangements. On the other hand, this study also reveals that cohabitation may limit children's education opportunities. Therefore, it is essential to explore the competing hypotheses behind this negative association: how the lack of socioeconomic resources of cohabiting mothers may limit children's access to preschool, as well as how the stability of the conjugal relationship and the cultural and psychological selectivity of parents who cohabit may affect children's outcomes. Future quantitative and qualitative research in this field is necessary in order to guide public policies that ensure preschool education for all children, regardless of the parents' living arrangement or conjugal status, in Mexico: a developing nation with emerging changes in marital status.

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Recibido: 12-08-2017

Aceptado: 07-07-2019