ORIGINAL RESEARCH

Reproductive Behavior of Immigrant Latin American Women in Spain

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Abstract

The present study analyzes fertility patterns among a group of Latin-American female immigrants examining the impact of decade of birth, educational level, and migration on reproductive behavior. The study group was composed of 138 Latin-American women, aged 18 to 59 years, and residing in Spain. Menarche occurred at a mean age of 13.6 years old (sd 1.8) and the social initiation of fertility, as determined by age of first cohabitation, occurred at a mean age of 21.4 years (sd 0.4). Neither of these variables was affected by decade of birth. However, there were significant educational influences on age at first cohabitation. Women with a higher educational level showed delayed cohabitation and decreased fertility rates. On the other hand, there was in increase in the number of induced abortions after immigration to Spain seen among the youngest women. In conclusion, age at first cohabitation is an important indicator for the analysis of community demographic dynamics, although this age is conditioned by educational level. Likewise, adaptation to new social structures and situations is associated with changes in reproductive behaviors and may lead to practices among women that put their health at risk.

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Introduction

The study of human reproduction should be approached as complex phenomenon. Human ecology represents a possible method to accomplish this. Human ecology approaches reproduction as process in which biological factors interact as components and processes in the dynamic between society and environment (a dynamic which includes social, economic, and cultural dimensions). Indeed fertility, which can be defined as the number of living newborns per woman, clearly depends on this interaction. Fertility is directly associated with a population's level of physiological well-being and with the general level of development in a community, this is to say, with the social, economic, and cultural structures of the environment in which women live.[1]

In contemporary societies fertility rates are characterized by a net decline in reproduction rates due to the use of modern, effective contraception, which makes possible the control of family-size and the spacing out of pregnancies. The impact of this factor on demographic dynamics in Spain must be considered in the context of a growing immigrant population (and without ignoring that the population is rapidly aging).

The decline in the fertility rates has been the subject of numerous analyses and has been explained in different ways depending on the theoretical perspective from which it has been studied. In developing countries, increased contraceptive use has been the main and direct cause of fertility rate decline.[2,3,4,5] Fertility rate decline has also been associated with the integration of women in the workforce[6] and with the educational level of women. Some authors[7]

believe that education best explains differences in fertility rates among individuals, countries, and different time periods.

Influence of migration on the demographic structure of the receiving country is conditioned by the reproductive dynamic of the populations of origin. Although developing countries have also experienced a decline in fertility rates, these declines have been less than that registered in the Spanish population. Concretely, the global fertility rate in Latin-America decreased from 5.1 in the mid-seventies to 2.5 for the period between 2000 to 2005.[8] Recent data demonstrate that the Spanish fertility rate has risen due to childbearing among immigrant women.[9, 10, 11]

On the other hand, territorial displacements can become a conditioning factor of changes in reproductive behavior. Migration implies moving to another environment, placing individuals in new forms of social, economic, and cultural organization. This can encourage immigrants to modify their behavior patterns and to adapt their reproductive patterns to the new situation. There are studies that show how the number of years residing in the receiving country plays an important role in the development of fertility in immigrant women,[12,13] which tends to resemble that of the native women.[14,15,16]

Reproductive behavior, a key theme in sexual health, influences immigrant women's health[17] as much as it influences the health of their offspring.[18] Changes associated with migration can influence the wellbeing of mothers and their newborns. It is clearly both important and necessary to better understand reproductive behavior patterns in immigrant women in order to identify issues related to sexual and reproductive health and to improving sanitary attention in accordance with their social situation.

Given these considerations, the objective of this study was to analyze the fertility pattern of a group of Latin-American immigrant women and to examine the influence of generational differences, education level, and migration on reproductive behavior.

Materials and Methods

The study group was composed of 138 Latin-American women between ages 18 and 59 years old. The mean age was 31.5 years old (sd=8.5). 52.9% had completed a secondary education. The mean time living in Spain was 2.4 years (29.3 months, sd=27.8). The women came originally from Ecuador, Peru, Colombia, the Dominican Republic, Honduras, Guatemala, and Bolivia as seen in Table 1.

Although conditions for women in Latin-America are quite diverse given differing social contexts, data in this study have been analyzed as a whole in order to obtain a global assessment of the reality of Latin-American immigrant women's lives in Spain.

The data were collected between 1995-96 and 2002-03 in the Autonomous Community of Madrid. Personal interviews were carried out with women who agreed to participate in the study in a voluntary and anonymous manner. Contact with the subjects was made in non-governmental organizations as well as immigrant women's associations.

The following variables were examined as relevant to the reproductive cycle of the interviewed women:

- Menarche: Data on menarche was obtained via subject recall. A correction factor of 0.50 was added[19] since the women referred to their age in years, independently of whether they had just turned that age or were about to turn a year older.

- Age at first cohabitation: This was considered as the age at which each woman had her first cohabitation experience and independently of the onset of sexual intercourse. At the time of this study a plurality of the women were either married or living with their partner (48%); 40.6% were single; the rest were either separated or divorced.

- Age at first maternity: This was taken as the mother's age at the birth of her first living newborn; in 87.5% of the women studied, this occurred after migration to Spain.

- Total number of pregnancies.

- Total number and type of abortions (spontaneous and induced).

- Contraceptive use (traditional as well as modern methods) before and after migration.

The following social variables were measured:

- Woman's age. For the purpose of estimating generational variation with respect to

reproductive behavior (independent of migration), the sample was divided in 3 groups of adequate sample sizes: a) women younger than 29 years old, b) those between 30 and 39, and c) those older than 40 years old. Most of the women in the three groups had begun their reproductive lives before migration.

- Educational level: This variable allowed the estimation of cultural influences on fertility. Education was divided into four groups: no or incomplete studies, elementary, secondary and university.

- Years of residence in Spain: This variable allowed the measure of residence in Spain on reproductive behavior.

SPSS 12.0 for Windows was used for statistical analysis. Application of the Kolmogorov-Smirnov test demonstrated that the data was not normally distributed. Consequently non-parametrical Kruskal-Wallis (H) tests were applied to compare variation and analyze Spearman rank correlation. The Chi square test of Pearson (χ^2) was used for categorical variables. Whenever when the value of any cell was lower than 5 cases (as was common) significance tests were not performed.

Results

Tables 2 and 3 display the biological and behavioral variables stratified by age and educational level. Age at menarche did not decrease significantly in older women in relation to age, nor did it seem to vary by educational level. In all the age groups, the average value was between 13.5 and 13.9 years.

Most of the women (96%) had cohabited before migration. Age of women at first cohabitation does show generational variations. However, women with a college education significantly delay cohabitation when compared to the other groups. The data demonstrate that an important number of women cohabited at a young age (before age 19), especially women who are very young (61%) and those who had only elementary education. The results pertaining age upon first maternity are similar to those regarding cohabitation, and also reveal precocious maternities; 38% of the total population gave birth to their first newborn before turning 19 years old.

The number of pregnancies and the number of living newborns show significant differences according to age and educational level. As might be expected, the value of both variables increases with as women grow older, but decreases as educational level rises.

Concerning those variables that might decrease fertility rates - number of abortions and contraceptive use – the only significant differences were seen in the number of abortions in relation to age. Generally, a higher percentage of women used some form of contraception in their countries of origin than they did in Spain. Only among the youngest women is there a tendency to increase use contraceptive methods after migration. This remains true despite the fact that 76% of the women over 40 years old moved to Spain during their reproductive years.

Use of contraception and induced abortion are reproductive behaviors likely to be modified by migration. However no association was found between length of residence in Spain and the number of induced abortions or the use of contraception. Nevertheless, among women younger than 29, the percentage of induced abortions is higher than that of spontaneous abortions (19.5% as opposed to 12%). Most of these induced abortions were performed in Spain (57% of the total number of induced abortions). It is worth noting that induced abortions are more common in younger women (less than 29) than in older women.

Tables 4 and 5 show the coefficients of menarche and age at first cohabitation with the reproductive variables studied, stratified by age and education level. In neither table is there a significant relationship between initiation of cohabitation and reproductive behaviors. Age at first cohabitation is the factor that determines the age of the mother upon the birth of her first newborn (representing the real onset of her reproductive life) and family size. However among the youngest women, who are starting their reproductive stage, and among those with the lowest education level, this last variable is no longer significant. The older the woman is at starting cohabitation, the older she will be at maternity, and the smaller her family size.

Table 1. Geographical Distribution and Mean Age per Group

Country of Origin	N	%	Age	
			Mean	Sd
Ecuador	33	23.9%	31.1	8.2
Domincan Republic	33	23.9%	29.0	7.6
Peru	29	21%	31.5	8.1
Colombia	26	18.8%	33.6	10.3
Bolivia	11	8%	35.7	8.3
Honduras	3	2.2%	31.0	11.3
Guatemala	3	2.2%	29.0	3.6

Table 2. Reproductive Characteristics of the Total Population stratified by age

	Total	< 29 yrs. old		30-39 yrs.		> 40 yrs. old			H	p
	n	x	n	x	n	x	n	x (sd)		
Menarche	128	13.6 (1.8)	56	13.5 (1.9)	53	13.6 (1.6)	19	13.9 (2.2)	.180	.914
Age at first cohabitation	73	21.4 (5.4)	23	19.1 (3.0)	35	23.0 (5.8)	15	21.3 (6.1)	5.818	.055
Age at first maternity	98	21.7 (4.5)	35	20.4 (3.3)	45	22.7 (5.0)	18	21.9 (5.0)	3.779	.151
Pregnancies	138	2.0 (1.8)	60	1.2 (1.0)	57	2.3 (1.6)	21	3.4 (2.7)	26.363	.000
Living newborns	138	1.4 (1.5)	60	0.8 (0.8)	57	1.6 (1.2)	21	2.8 (2.6)	25.205	.000
Abortions	138	0.47 (0.8)	60	0.27 (0.5)	57	0.68 (1.0)	21	0.48 (0.7)	8.013	.018
	n	%	n	%	n	%	n	%	χ^2	p
Contraceptive use in country of origin	75	54.3	28	46.7	37	64.9	10	47.6	4.374	.112
Contraceptive use in Spain	60	45.8	32	53.3	24	44.4	4	23.5	4.808	.090

Table 3. Reproductive Characteristics stratified by Educational Level

	No studies		Elementary		Secondary		College		H	p
		x	n	x (sd)	n	x (sd)	n	x (sd)		
Age	6	32.7 (8.0)	22	30.5 (9.5)	73	31.47 (9.0)	37	31.9 (7.1)	1.381	.710
Menarche	5	13.7 (1.1)	22	13.8 (1.9)	65	13.5 (1.8)	36	13.7 (2.0)	.722	.868
Age at first cohabitation	4	20.3 (4.7)	12	17.7 (3.0)	41	21.9 (6.0)	16	23.5 (3.8)	11.846	.008
Age at first maternity	6	21.3 (3.8)	18	19.4 (3.1)	55	21.4 (4.6)	19	25.1 (4.0)	18.013	.000
Pregnancies	6	2.8 (1.6)	22	2.8 (2.4)	73	2.0 (1.8)	37	1.3 (1.1)	11.521	.009
Living Newborns	6	2.7 (1.6)	22	2.2 (2.3)	73	1.4 (1.3)	37	0.8 (1.0)	15.469	.001
Abortions	6	0.17 (0.4)	22	0.50 (0.6)	73	0.56 (1.0)	37	0.32 (0.5)	2.334	.506
		%	n	%	n	%	n	%	χ^2	p
Contraceptive use in country of origin	3	50.0	12	54.5	45	61.6	15	40.5	4.411	.110
Contraceptive use in Spain	1	16.7	9	40.9	37	54.4	13	36.1	3.354	.187

Table4. Correlation Coefficients among Reproductive Variables stratified by Age

	≤ 29 yrs. old		30 – 39 yrs. old		≥ 40 yrs. old	
	Menarche	Age at Cohabitation	Menarche	Age at Cohabitation	Menarche	Age at Cohabitation
Menarche	--		--		--	
Age at cohabitation	.153	--	.239	--	-.010	--
Pregnancies	-.070	-.384	.168	-.301	.004	-.656(**)
Age at first maternity	.275	.767(**)	.075	.654(**)	-.025	.701(**)
Living Newborns	.056	-.398	.163	-.469(**)	.085	-.650(**)
Abortions	-.104	-.205	-.011	.068	-.379	-.128

Coefficients of Spearman Correlation * $p < 0.05$ ** $p < 0.01$

Table 5. Correlation Coefficients among Reproductive Variables stratified by Education

	Elementary		Secondary		College	
	Menarche	Age at Cohabitation	Menarche	Age at Cohabitation	Menarche	Age at Cohabitation
Menarche	--		--		--	
Age at cohabitation	.088	--	.133	--	.086	--
Preganancies	-.012	.314	.113	-.323(*)	-.111	-.442
Age at first maternity	.064	.964(**)	.100	.643(**)	.627(**)	.901(**)
Living Newborns	.097	.217	.156	-.357(*)	.011	-.499(*)
Abortions	-.275	.222	-.019	-.010	-.199	.017

*$p<0.05$ **$p<0.01$ The "No Studies" group has been eliminated from the sample.

Discussion

The association between fertility levels and cohabitation patterns has been shown in many populations through numerous studies.[20,21,22,23,24] Thus, although menarche marks the physiological onset of the fertility in women, this association would suggest that maternity occurs with cohabitation.

In the study population, it can also be seen that marriage and, in concrete terms, age at first cohabitation modulates reproductive behavior, independent of the age of menarche. The younger that women cohabitate, the younger they will be upon the birth of their first child, and the larger their family size. At the same time, older ages at first cohabitation delay first maternity experience, this is to say, the onset of reproduction.

On the other hand, the results show a high percentage of precocious maternity. Studies of sexual and reproductive health in Latin America reveal a high rate of early sexual intercourse[25,26] and a high percentage of teen and extramarital pregnancy.[27,28] Consequently, it could also be considered that the first pregnancy determines age of first cohabitation.

In any case, age at first cohabitation is associated with the number of children. Our results also suggest that age at first cohabitation is determined by cultural factors as it increases with education level. Thus, women with higher academic levels have a later maternity age, a lower number of pregnancies and fewer children.

Women in our study had an average number of children (1.4) that was lower than that estimated in their societies of origin during the period 2000-2005 (2.5)[8], but higher than that described for the Spanish population (1.26 children on average per woman);[29] it is important to keep in mind that in the Community of Madrid the mean age of mothers at the birth of their firstborn is 30

years old.[30] This finding has two important implications for the receiving society. On one hand, immigrant groups contribute to slowing down the aging process in the autochthonous population; this aging results from a low birth rate and high life expectancy. On the other hand, it implies that efforts must be made to integrate the sons and daughters of immigrant mothers in the receiving country's educational system, providing cultural support (and linguistic support as well in the case of non-Spanish speakers) and training professors in a multicultural perspective, among other factors.[31]

Undoubtedly, the results show a fertility rate among immigrants that is higher than that of the Spanish population, but decreased in relation with the countries of origin. This alteration of reproductive behavior with respect to the traditional pattern responds to behavioral changes due to changes in attitudes and values that educational level and generational variation impose. Nevertheless, it should pointed out that the behavioral changes seen in immigrant populations as they adapt to new situations in the country that is receiving them, do not necessarily express a change derived from personal choice, but that rather one determined by social and economic limitations in their new environment.

The tendency toward increased induced abortions after settling in a receiving society among the younger women in our study demonstrates how migration changes reproductive behavior in immigrants. This agrees with Helstrom's findings that in the countries of Northern Europe immigrant status is a risk factor for induced abortion. [32] Nonetheless, it should be noted that the rate of voluntary abortions in Latin America and the Caribbean is particularly high (0.8 abortions per woman).[33] It is possible that those women younger than 29 analyzed in the study had more induced abortions after migration, because they had a higher number of sexual contacts in Spain, due to time of arrival and permanence in this country. In any case, these are important findings from the viewpoint of sexual and reproductive health.

In conclusion, age at first cohabitation, due to its influence on fertility rate, is an indicator of great importance in the analysis of demographic dynamics in communities, a relationship that is conditioned by educational level. In women with higher academic levels, the close relation between age at first cohabitation and fertility rate may not be seen. Age at first cohabitation, a preliminary step towards the onset of reproduction, may not determine either fertility rate or family size. Moreover, along with women's ages, civil status, level of income and other variables, migration itself is an influential factor in attitudinal change. It is yet another variable that modifies reproductive patterns and can affect risk practices that affect women's health.

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