Trends in Inequalities in Induced Abortion According to Educational Level among Urban Women

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ABSTRACT *This study aims to describe trends in inequalities by women's socioeconomic position and age in induced abortion in Barcelona (Spain) over 1992–1996 and 2000–2004. Induced abortions occurring in residents in Barcelona aged 20 and 44 years in the study period are included. Variables are age, educational level, and time periods. Induced abortion rates per 1,000 women and absolute differences for educational level, age, and time period are calculated. Poisson regression models are fitted to obtain the relative risk (RR) for trends. Induced abortion rates increased from 10.1 to 14.6 per 1,000 women aged 20–44 (RR=1.44; 95% confidence interval (CI) 1.41–1.47) between 1992–1996 and 2000–2004. The abortion rate was highest among women aged 20–24 and 25–34 and changed little among women aged 35–44. Among women aged 20–24 and 25–34, those with a primary education or less had higher rates of induced abortion in the second period. Induced abortion rates also grew in those women with secondary education. In the 35–44 age group, the induced abortion rate declined among women with a secondary education (RR=0.66; 95% CI 0.60–0.73) and slightly among those with a greater level of education. Induced abortion is rising most among women in poor socioeconomic positions. This study reveals deep inequalities in induced abortion in Barcelona, Spain. The trends identified in this study suggest that policy efforts to reduce unintended pregnancies are failing in Spain. Our study fills an important gap in literature on recent trends in Southern Europe.*

KEYWORDS *Reproductive health, Urban health, Educational level, Induced abortion, Pregnancy planning*

INTRODUCTION

In 1985, induced abortion was decriminalized in Spain under three circumstances: (1) fetus malformation, (2) rape, and (3) serious risk to either physical or mental health. This law has had a great impact in reducing induced abortions carried out in medically unsafe conditions or abroad.¹ The abortion rate in Spain was lowest in the years just after the law came into force and culminated in 2006 at 10.6 per 1,000 women aged 15–44.² The induced abortion rate in Spain is in the middle of the

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range of European countries although it has been increasing in the last few years. Up to the mid-1990s, induced abortion rates had been falling in many parts of the world as access to family planning education and contraceptive services improved.³ More recent reports have indicated that rates are either stable or show a slightly upward trend in most developed countries.⁴

In Barcelona, the second largest city in Spain, the abortion rate is 14.3 per 1,000 women aged 15–49⁵ and about one in four known pregnancies end in an induced abortion,⁶ with figures similar to those in Sweden⁷ or England.⁸ Differences between urban and national rates have also been observed in other countries.^{9,10}

Socioeconomic inequalities in the decision to abort can be understood in terms of the differences in intellectual and material resources available to women in different socioeconomic positions,¹¹ resulting in unequal opportunities to avoid unintended pregnancies. Socioeconomic inequalities in pregnancy planning have already been reported in the city and are similar to those of other countries: teenage fertility rates vary greatly according to income levels¹²; pregnancies in disadvantaged women are more often unintended¹⁰ or more poorly controlled.^{13,14} Trends in induced abortion inequalities according to socioeconomic position have only been studied in a few countries; the majority of these studies have found increases in these inequalities. In Spain, these kinds of studies based on individual data do not exist. However, the existence of adequate information systems in the city of Barcelona provides an opportunity to measure social and economic inequalities in induced abortion in a southern European city. This study seeks to describe trends in induced abortion in the city of Barcelona (Spain) based on socioeconomic position and age in two time periods: 1992–1996 and 2000–2004.

MATERIALS AND METHODS

This is a cross-sectional and population-based study, using individual data. The study population consists of all induced abortions among women aged 20 to 44 residing in Barcelona between 1992–1996 and 2000–2004. Women under 20 and spontaneous abortions are excluded. The source of information for this study is the legally induced abortion registry of the city, which feeds on data from the Legal Abortion Register of Catalonia (Department of Health). As of 1985, health centers authorized to carry out induced abortions are required by law to complete an anonymous and individual questionnaire. Induced abortion is reported in each region of Spain, which in turn sends a report to the Ministry of Health.

Population figures have been estimated from the municipal censuses performed in Barcelona in 1991 and 2001 and which provide primary information on population and level of education. Level of education is self-declared in both sources of data although data collected in the municipal census are more disaggregated, which allows for regrouping to form the same categories as collected in the induced abortion registry, thus making it possible to achieve the same categories in rate numerators and denominators.

The main study variable is induced abortion rate per 1,000 women. For analytical purposes, induced abortions performed each year are grouped into two periods (1992–1996 and 2000–2004) to obtain a sufficient number of cases to study the socioeconomic inequalities.

The study covariates are grouped into three age ranges (i.e., 20–24, 25–34, and 35–44) and three educational level groups: (1) primary education or less (7–9 years of schooling), (2) secondary education (10–14 years of schooling), and (3) university

education (15 years or more of schooling). Missing data for education levels are insignificant: 38 cases in the 1992–1996 period and 24 cases in the 2000–2004 period.

Induced abortion rates per 1,000 women for each 5-year period are calculated according to level of education and age. The rate ratios (RR) refer to the relative differences of induced abortion between the last period, 2000–2004, and the first period, 1992–1996. Measurement of socioeconomic inequalities in induced abortion can be based on relative inequalities. These measures express the extent to which the induced abortion burden is unequally distributed between socioeconomic positions. Rate differences refer to the absolute differences of induced abortion rates between university education and all other educational levels. Absolute difference is a useful complement to measures of the overall level of induced abortion. Poisson regression models are fitted to obtain those RR (and 95% confidence intervals (CI)). All statistical analyses are performed with Stata statistical software.¹⁵

RESULTS

In the city of Barcelona, induced abortion rates increased from 10.1 to 14.6 per 1,000 women aged 20–44 (RR=1.44; 95% CI 1.41–1.27) between 1992–1996 and 2000–2004 (Table 1). The abortion rate increased in all age groups and was highest among women aged 20–24. In these age groups, around 16 abortions were performed for every 1,000 women in 1992–1996 and 19 abortions in 2000–2004. The rate of induced abortion changed little among women in the 35–44 age group (from 5.2 to 6.6 per 1,000 women).

Between both periods, the rates of abortion grew among women with primary education or less (RR=2.41; 95% CI 2.34–2.49). Rates showed little change among women with secondary and university education (Table 1).

A separate analysis was performed because induced abortion rates varied dramatically with regard to education and age. The highest induced abortion rates were found in the youngest age group and among women with primary education or less. The rate of induced abortion in women with primary or less education in 2000–2004 was about two times that of primary education or less in 1992–1996 (Table 2).

TABLE 1 Induced abortion according to level of education and age between 20 and 44 years old in two periods, 1992–1996 and 2000–2004, Barcelona, Spain

	Number	Rate ^a	RD	Number	Rate ^a	RD	RR ^b	95% CI	
Total abortion	14,159	10.1		20,668	14.6		1.44	1.41	1.47
Age group									
20–24	4,541	15.7	10.5	6,387	25.7	19.1	1.64	1.58	1.70
25–34	6,800	12.0	6.8	10,521	17.6	11.0	1.46	1.42	1.51
35–44	2,818	5.2		3,760	6.6		1.27	1.21	1.34
Level of education									
Primary or less	6,406	10.2	0.0	9,620	24.6	14.1	2.41	2.34	2.49
Secondary	4,451	10.0	−0.2	5,716	11.2	0.7	1.11	1.07	1.16
University	3,302	10.2		5,332	10.5		1.03	0.98	1.07

RD rate difference (refers to the absolute differences of rates between the university education group and the other educational levels)

^aRate per 1,000 women 20–44 years old

^bThe relative difference of rates of induced abortion between 2000–2004 and 1992–1996 in each level of education

TABLE 2 Induced abortion according to age groups, level of education, and district of residence in women 20–44 years old in two periods: 1992–1996 and 2000–2004, Barcelona, Spain

Age groups	Level of education	1992–1996			2000–2004			1992–1996 vs 2000–2004		
		Number	Rate ^a	RD	Number	Rate ^a	RD	RR ^b	95% CI	
20–24	Primary or less	2,068	25.6	5.6	3,108	53.6	33.8	2.09	1.98	2.21
	Secondary	1,726	10.1	–9.9	1,993	15.9	–3.9	1.58	1.48	1.69
	University	747	20.0		1,286	19.8		0.99	0.90	1.08
25–34	Primary or less	2,963	14.0	3.0	4,790	35.5	23.7	2.54	2.43	2.66
	Secondary	2,018	10.7	–0.3	2,741	13.2	1.4	1.23	1.16	1.30
	University	1,819	11.0		2,990	11.8		1.07	1.01	1.13
35–44	Primary or less	1,375	4.1	–2.0	1,722	8.7	3.1	2.12	1.97	2.27
	Secondary	707	8.3	2.2	982	5.5	–0.1	0.66	0.60	0.73
	University	736	6.1		1,056	5.6		0.92	0.83	1.01

RD rate difference (refers to the absolute differences of rates between the university education group and the other educational levels)

^aRate per 1,000 women 20–44 years old

^bThe relative difference of rates of induced abortion between 2000–2004 and 1992–1996 in each level of education

In the youngest women, induced abortion rates also grew among those with secondary education.

In the middle-aged group, the induced abortion rate follows the same profile as that in the youngest women, and, in women aged 35–44, the greater the level of education, the sharper the decline in the rate of induced abortion.

DISCUSSION

As in other cities and countries,⁴ induced abortion increased between 1992–1996 and 2000–2004 in Barcelona, Spain. This could reflect the fact that levels of contraceptive use are not sufficient to meet the fertility desires and family planning needs of women and couples.¹⁶ In Europe, a deterioration in family planning services and sexual education has been observed in connection with the decrease of contraception use and with the increase in abortion rates.¹⁷ Moreover, in southern European countries, the use of highly effective methods, such as oral contraception, is not as common as in northern European countries.¹⁸

In our study, the overall growth masked changes with regard to age and socioeconomic position. The highest increase in rates was found among women in the 20–24 and 25–34 age groups but was slight for women aged 35–44. In addition, the highest increase was found in the younger and less affluent women. In a previous study, we found that 42% of pregnancies in the city of Barcelona were unintended and 25% ended in an induced abortion⁶; similar figures have been reported in other countries.¹⁹ In this study,⁶ less privileged women had more unintended pregnancies than those who are more affluent,¹⁴ and poor women emphasized their difficulties regarding regular use of contraception and access to public health care services.²⁰

Moreover, disadvantaged women are more likely than other women to have unprotected intercourse. Even when they use contraceptives, they experience higher failure rates, suggesting that, because of gender inequality, these women frequently do not even control the circumstances in which they have intercourse, much less the decision regarding contraceptive use.²¹

The increase in induced abortion in younger women could also reflect an increase in sexual activity, younger age of sexual initiation, and a higher number of sexual partners.²² Moreover, among younger women, the decision to have an induced abortion could be strongly influenced by a wish to continue their studies or start working, explaining why they more often choose to terminate their pregnancy in an abortion.²³ The only other relevant study available, conducted in Spain in 1990,²⁴ found that women of advantaged socioeconomic levels also presented a higher abortion rate.

Surprisingly, induced abortion increased simultaneously with an increase in the variety of contraceptive methods available, including the possibility of emergency contraception, which has considerable potential for avoiding unplanned pregnancies and hence of reducing the abortion rate.²⁵ In the case of emergency contraception, women and their partners must know when emergency contraceptive is effective, where to procure it, and how to get it.²⁶

In addition, Barcelona, like many large cities, has experienced multinational immigration in recent years; almost 14% of all women residing in the city in 2007 were immigrants.²⁷ We have observed that birth rates have increased in connection with recent immigration but, unfortunately, we only have data on induced abortion in immigrants for 2005 and are therefore unable to analyze trends. For that year, we determined the induced abortion rate in women from developing countries as 22.1 per 1,000 women aged 15–49, while in autochthonous women the rate is 7.8. This difference could, at least in part, be explained by the fact that immigrant women have received less contraceptive “counseling” and have less previous experience in the use of contraceptive methods.^{9,28} Further research is required to explain the impact of this factor.

Access to abortion is a key component of women’s health. This access could be difficult in areas with decreased availability of abortion services for poor women, teenagers, or immigrants. In Barcelona, only one regionally based nonprofit association covers induced abortion for women unable to afford the operation. In 2006, 19% of all induced abortions in the region (Catalonia, Spain) were covered by this association, which selectively finances induced abortion through a subsidy depending on socioeconomic situation, e.g., young unemployed women, without an income of their own and not cohabiting with a partner or family.

Our study is subject to several limitations. The measure of socioeconomic position as occupation or social class is not registered in the source of data. Educational level is self-declared which could be misclassified²⁹; however, it is widely used³⁰ and may be especially useful for our study of induced abortion in women regardless of age or employment circumstances. Furthermore, socioeconomic position is related to women’s behavior in avoiding unintended pregnancies and also plays a strong role in determining abortion behavior.^{31,32} In excluding women under 20, we are also excluding the most vulnerable population, but, on the other hand, many of those women still have not reached their final level of education.

For analyses of time trends in health inequalities, level of education has its strengths and weaknesses. A main advantage of educational level is that it can be applied to all ages, while a disadvantage is that changing educational compositions of subsequent generations may reduce comparability over time.³³

This study reveals deep socioeconomic inequalities in induced abortion in Barcelona, Spain, where the abortion rate is rising. The trends identified in this study suggest that policy efforts to reduce unintended pregnancies are failing in Spain. They should focus on improving access to contraceptives, particularly for younger women as well as ensuring access to abortion services for less privileged women. Another relevant point is the reform of the current law, which has not been modified since 1985.³⁴ While the legal period to interrupt a pregnancy is up to week twenty-two of gestation in the case of fetus malformation and week twelve in the case of rape, the law has not specified the legal period to interrupt a pregnancy in the most common circumstance: “serious risk to either a woman’s physical or mental health, or to her life,” generating legal uncertainty for women and health professionals alike.

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