

Changes in the Use of Contraceptive Methods and Their Correlation with Induced Abortion Rates in Spain between 2007 and 2016

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Abstract

Objectives: To assess the relationship between the use of contraceptives and the rate of induced abortion in Spain.

Methods: Observational descriptive study of data obtained for the period between 1 January 2007 and 31 December 2016, specifically for the years 2007, 2009, 2011, 2014 and 2016, from databases of the National Statistics Institute (INE), the Spanish Ministry of Health, Social Services and Equality, the Daphne questionnaire and the population study of the Spanish Society of Contraception.

Results: Some form of contraception was used by 80% of women in 2007, this falling to 71.1% by 2016. A total of 112,138 induced abortions were notified in 2007, corresponding to an overall rate of 11.49 abortions per 1000 women, while 93,131 abortions were notified in 2016 (10.3 per 1000 women). The highest rates of abortion were found among women between 20 and 24 years old (18.57 per 1000 women in 2007 and 16.72 in 2016) and among those aged between 25 and 29 years old (14.44 per 1000 women in 2007 and 15.41 in 2016).

Conclusions: In Spain, the percentage of women who use some form of contraception has decreased over the last 10 years. At the same time, the rate of induced abortion has also declined. Changes in the population pyramid and the type of contraception could explain these findings.

Keywords: Contraception; Abortion; Adherence; Spain

Introduction

In general, contraceptive methods are used to prevent unplanned pregnancies. It is known that the use of contraception is not uniform, with patterns of use differing between developed and developing countries [1] and even between European countries [2]. In many cases, unplanned pregnancies terminate in induced abortion, and hence one of the most important measures to reduce the rate of induced abortion is to increase the use of effective contraception [3].

In Spain, the use of modern contraceptive methods and induced abortion were decriminalised in 1978 and 1985, respectively. Enactment of the Sexual and Reproductive Health Law in 2010 made contraception a basic right for all Spanish citizens and amended the Spanish pregnancy termination law, making induced abortion more accessible. We hypothesised that a wider use of effective contraception would be associated with a lower rate of induced abortion, and to test this hypothesis, we assessed the contraceptive habits of Spanish women over the last decade and changes in induced abortion rates over this period.

Material and Methods

We carried out a descriptive, observational study of data for the period between 1 January 2007 and 31 December 2016. To obtain the data on the population of women of childbearing age in Spain, we consulted the databases of the Spanish Statistics Institute (INE) [4]; to assess the number and characteristics of induced abortions in the same period of time, we retrieved data from the databases of the Spanish Ministry of Health, Social Services and Equality concerning elective terminations notified in 2007, 2009, 2011, 2014 and 2016 [5]; and to assess patterns of contraceptive use, we consulted the Daphne surveys from 2007, 2009 and 2011 [6] and the population study on the use of and attitudes towards contraceptive methods carried out in Spain in 2014 and 2016 by the Sexual and Reproductive Health Observatory of the Spanish Society for Contraception [7].

The Spanish Ministry of Health, Social Services and Equality publishes data every year on induced abortions notified by the centres where they are carried out. The Daphne team composed of seven Spanish gynaecologists published biennial national surveys on contraceptive use funded by Bayer Spain S.L. until 2011. For Daphne surveys for each of the study years, a probabilistic, stratified random sampling was performed to select potential study candidates. A two-stage conglomerate

sampling was made, with subsampling and stratification of the first stage units which were the censal sections in which the country households are divided (each censal section includes a maximum of 2500 inhabitant living in the same geographical zone). Once those used for sampling had been selected, all households existing in these sections were counted, and the list of households for the sample (eight per censal section) was drawn by simple random sampling, without replacement, from the total list of households. When several women of childbearing potential (15–49 years) were eligible to be surveyed, one of them was selected at random using a random number table. This sampling design ensured adequate geographical and sociodemographic representativeness of Spain as a whole and included over 200 municipalities from all Spanish provinces. The variables used to stratify the sample to be selected were the following: age, marital status, geographical location, educational level and occupation [8].

Daphne team stopped its activity in the year 2012 and since then, in 2014 and 2016, national surveys on contraception have been commissioned by the Spanish Society for Contraception (SSC). The SSC surveys are performed by phone calls in some representative quota sample of 2200 Spanish women aged 14 to 49 years. Such design allows us to have representative data from whole Spanish women but no from any region or Autonomous Community.

In both surveys women were included despite they were married or not or they were living in union with men or not or they have occasional sex.

We collected data on 2007, 2009, 2011, 2014 and 2016 given that for these years there were data on both induced abortion and contraceptive use. For the analysis of the results, we classified contraceptive methods in the following way: long-acting reversible contraception (LARC): copper intrauterine device (IUD), levonorgestrel-releasing IUD and implant; short-active reversible contraception (SARC): oral contraceptive pills, vaginal ring, transdermal patch and injections; and condoms.

Data are expressed as percentage of use of contraceptive methods and rate of induced abortion per 1000 women of childbearing age.

Results

According to the National Statistics Institute, in Spain, there were 11,412,118 women between 15 and 49 years of age in January 2007 and 10,564,092 in December 2016. Of these

women, 80% reported using some form of contraception in 2007 and 71.1% in 2016. In (Figure 1) we present the population pyramid of Spain at the end of the year 2016. Women aged 15 to 49 years represent the 22,5% of overall Spanish population. A total of 112,138 induced abortions were notified in 2007, corresponding to an overall rate of induced abortion of 11.49 per 1000 women, while 93,131 were notified in 2016, corresponding to a rate of 10.36 (Figure 2). This means that the number of abortions decreased by 17% over the study period. The highest rates of induced abortion were observed among women aged between 20 and 24 years old (18.57 per 1000 women and 16.72 in 2016) and between aged 25 and 29 years old (14.44 in 2007 and 15.41 in 2016). (Figures 3 and 4) illustrate the changes in the use of contraceptive methods and rates of induced abortion in these age groups of women. (Figure 5) shows the data on the percentages of use of different types of contraception (LARC, SARC and condoms), and their relationship with the rates of abortion.

Discussion

Findings and interpretation

According to our data, the population of women of childbearing age in Spain has decreased by 7.4% (848,026 women) over the last 10 years. During this period, the percentage of women reporting use of some form of contraception decreased by 8.9%. This decrease, as it has been calculated as a percentage, cannot be explained by the decline in population. In the year 2007 80% of Spanish women of childbearing age used some type of contraception while in the year 2016 this percentage was 71,1%. In parallel with this decrease in contraceptive use, there has been a 0.11% decrease in the rate of induced abortion. At the same time, it has been a delay at the median age of first birth: 30,15 years in 2007 and 31,33 years in 2016. This fact could explain a decrease in the number of deliveries but it remains controversial the influence on decreasing rates of contraceptive use. The total population of women 15-49 years old has fallen in Spain by about one million in the years 2007 through 2016, but especially in the 20-29 years old group where it has been a decrease of 702,146 women (70% of overall decrease). Women over 40 years old has increased in absolute numbers: 1,759,738 women in the year 2007 and 1,966,573 in the year 2016. That group of women usually use less contraceptive methods than the younger groups and it could explain the decreasing rate of contraceptive use through these years.

One possible explanation for the decreasing rate of abortion could be the decrease in the use of condom. The efficacy of the condom as a contraceptive method is rather weak [9,10] and a decrease in its use (38,8% in 2007; 28,4% in 2016) could be a key factor in such reduction. At the same time, we observed a little increase in the use of LARC methods (from 4,5% in 2007 to 7,7% in 2016) that would be a helpful factor to decrease the number of abortions.

Limitations and strengths of the study

Our study has some limitations. The data on abortion were obtained from the records of the Ministry of Health, which do not always include all abortions performed. An unknown percentage of abortions carried out may have not been notified to the Ministry, and hence the data used may be an underestimation of the total number of abortions⁸. Other limitation could be we do not have data about miscarriages in this period of time. Any Spanish database records such information.

On the other hand, a strength of our study lies in the fact that it is based on data on the use of contraceptive methods obtained from surveys in women of childbearing age, representative of all Spanish women. Further, the surveys also collected information on the sexual activity of women, and hence, we were able to reliably identify women at risk of an unplanned pregnancy due to having sexual relations without using contraception.

Differences with other studies

Unplanned pregnancies are a problem in nearly all countries across the world. According to United Nations data, the rate of unplanned pregnancies is as high as 41%¹.

In developed countries, 80% of women of childbearing age use modern contraception, in particular oral contraceptives and condoms [11]. In this sense, the pattern of contractive use in Spain is similar to that in other countries. On the other hand, it seems that the use of some form of contraception alone does not ensure the prevention of unplanned pregnancies. Despite the wide use of contraception, there is still the need to promote the use of more effective methods and avoid changes from effective to less effective methods [12].

In Spain, the use of LARC methods, the most effective type available, remains low (7.7% in 2016). It is well known that the most widely used contraceptives (oral contraceptives and condoms) are less effective than LARC methods [13]. That

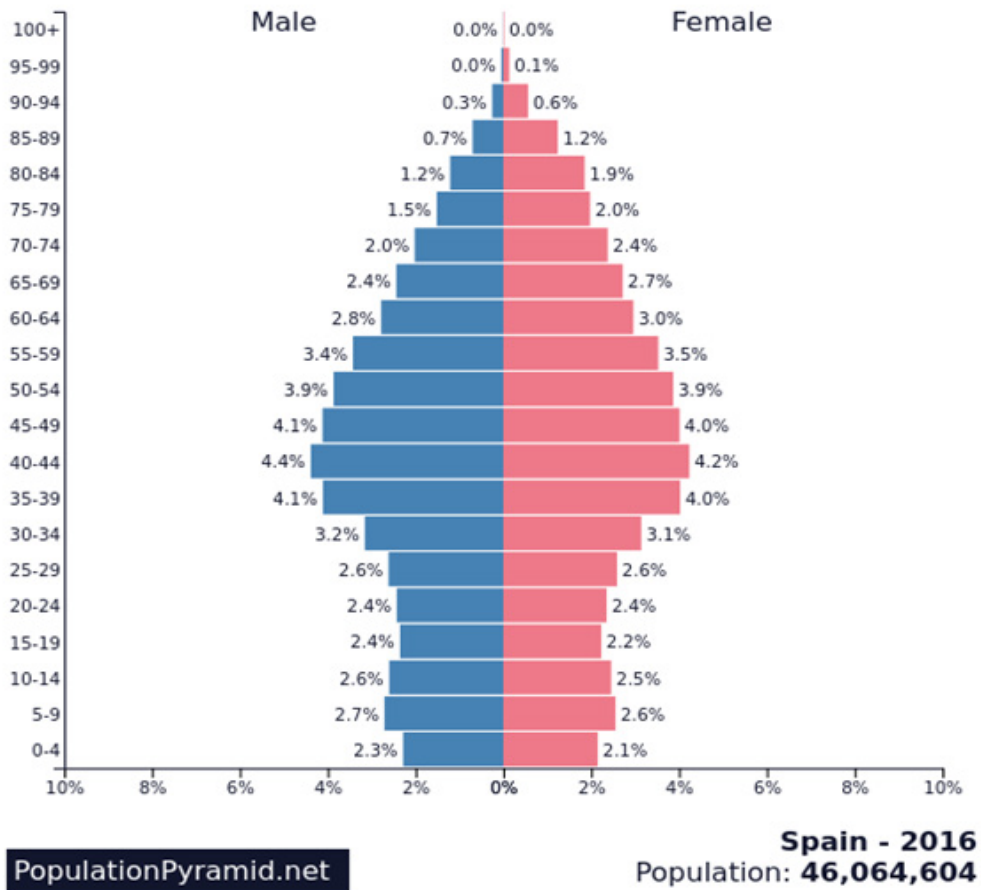


Figure 1: Spanish population pyramid in the year 2016

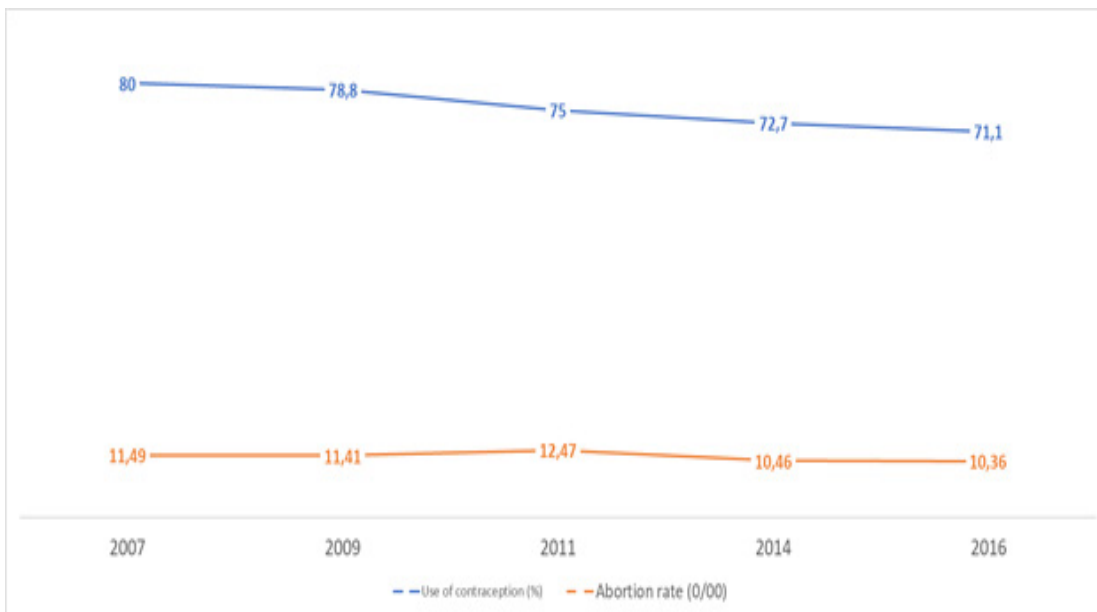


Figure 2: Changes in use of contraception and rate of induced abortion in all women of childbearing age over the period 2007-2016

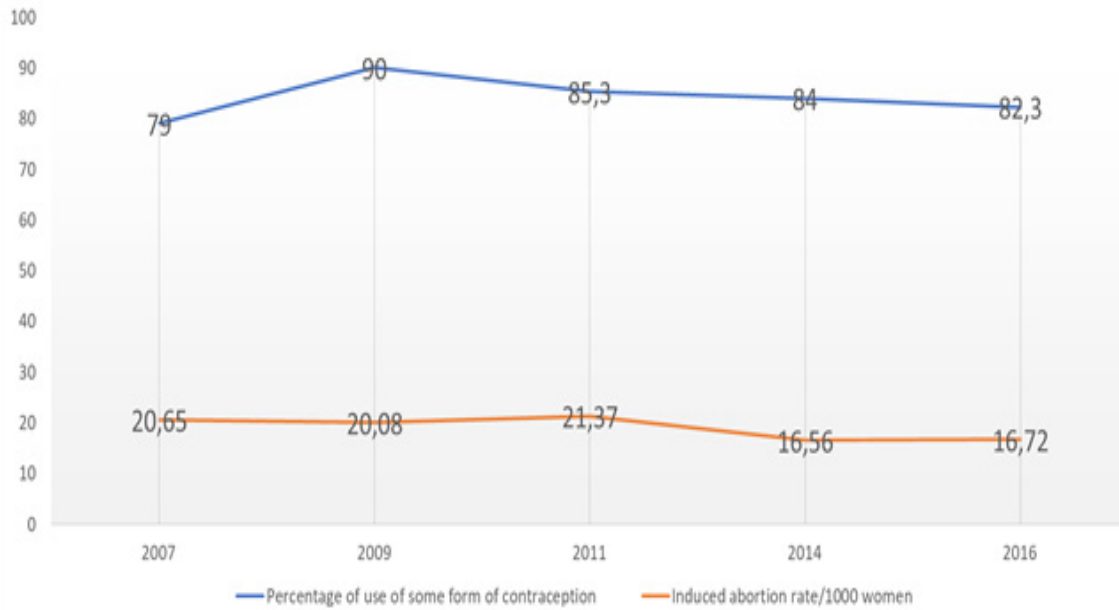


Figure 3: Changes in use of contraception and rate of induced abortion in 20- to 24-year-olds over the period 2007-2016

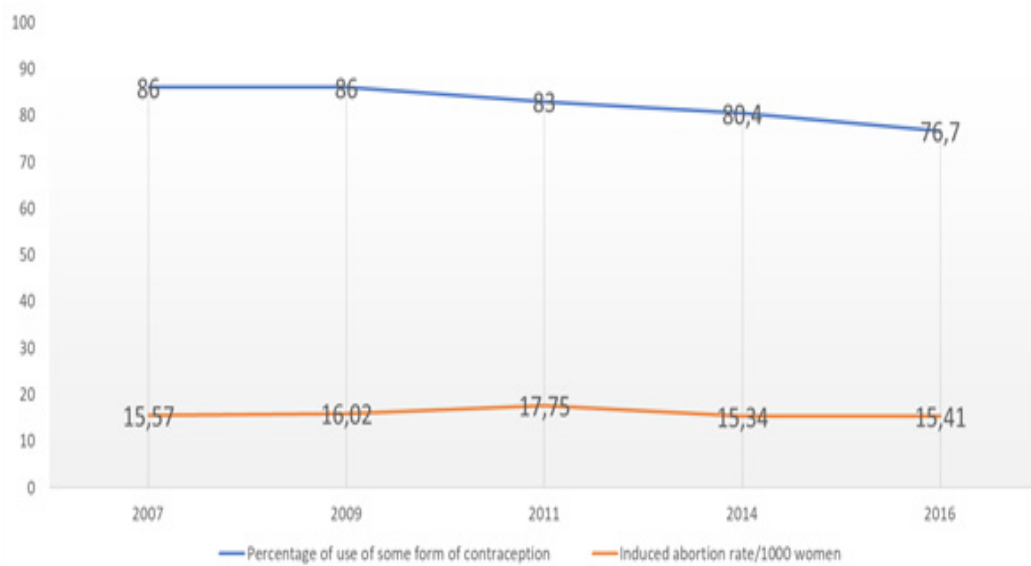


Figure 4: Changes in use of contraception and rate of induced abortion in 25- to 29-year-olds over the period 2007-2016

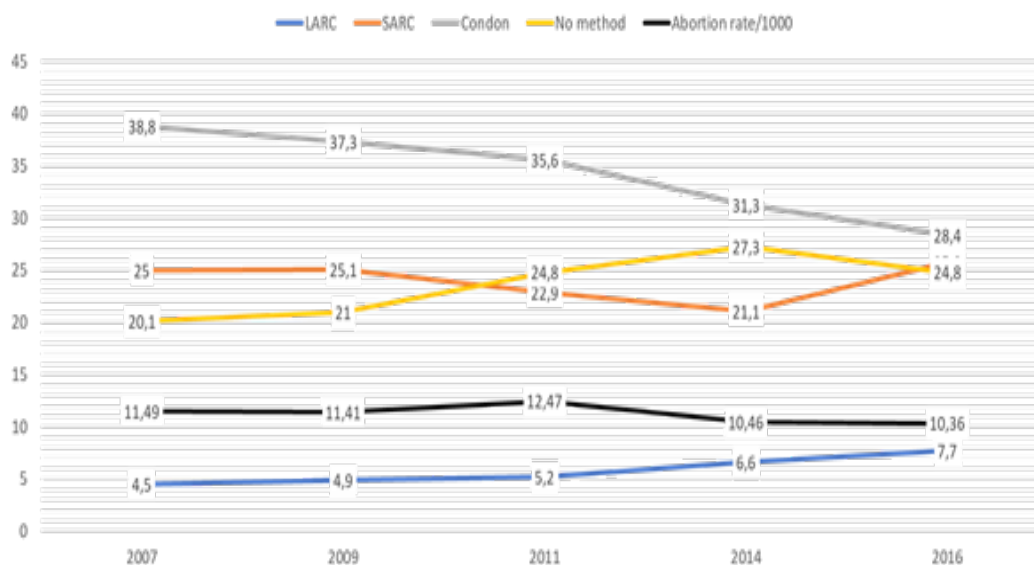


Figure 5: Use of different methods of contraception: LARC, SARC and condoms and their relationship with the abortion rates

LARC: long-acting reversible contraception

SARC: short-acting reversible contraception

is, we would expect more pregnancies due to contraceptive failure among women using SARC methods and condoms. The HAYA study demonstrated that most abortions in Spain occur in women who claim to be using some form of contraception [13]. Specifically, 39.5% of women who underwent abortion conceived despite using condoms and 11.6% reported that they were on oral contraceptives when they became pregnant.

The situation in other countries and among other cultures is similar to that in Spain. In Japan, access to the use of oral hormone contraceptives has not been associated with a reduction in the number of abortions [14]. One of the alleged reasons for this is that despite the availability of the contraceptive pill, condoms remain the most widely used form of contraception in Japan, and the rates of adherence are low [15]. In Spain, according to 2016 data, combined hormonal contraceptives are used by around 25% of women of childbearing age [7]. A study carried out in 2007 found that up to 65% of women using oral contraceptives in Spain reported adherence problems [16].

In Spain, overall abortion rates are low compared to worldwide rates [17], but higher than the mean estimated for Southern European countries (8.9/1000 women in 2011) [18]. Interestingly, the highest rate of abortions we observed in Spain was in 2011 (12.47/1000 women), one year after the law that allowed abortion and the reimbursement of fees for abortions in the first 14 weeks of pregnancy. It is plausible that funding

abortion may have brought to light abortion procedures that would not previously have been notified.

In our study, the highest rates of abortion were found among women aged 20 to 24 years old (16.72/1000 women in 2016), similar to the mean rates of abortion among young women of 17.6/1000 women previously estimated for Southern European countries [19]. Some research in teenagers has demonstrated a positive relationship between the use of effective contraception and reduction in the rate of unplanned pregnancies [20], but other studies have failed to confirm this finding. In Sweden, the rate of abortion in women aged 20 to 24 years old is high (34.7 per 1000 women) despite the fact that more than 50% claim to take oral contraceptives [21].

The situation observed in Spain in 2016 is a decrease in contraceptive use together with a less marked decrease in the abortion rate. A possible explanation for this would be the use of emergency contraception. Nevertheless, a study in the United Kingdom, where the rate of abortions among young women is particularly high [22], failed to show that emergency contraception produced a reduction in the rate of unplanned pregnancies [23].

Relevance of these findings

It seems evident that health policies have an impact on the rates of contraceptive use and of abortions [24]. In Spain, however, the new 2010 law has not had an impact on the percentage of women using contraceptives in general, or increased the use of LARC methods, unlike in other countries LARC use has tended to increase [25]. It is likely that a greater use of contraceptive methods that do not rely on adherence by women would help to reduce abortion rates.

Unanswered questions and future research

In spite of the wide use of contraception by Spanish women of childbearing age, poor adherence remains a barrier to its effectiveness [26]. Advising and recommending the use of LARC methods may be a good strategy to avoid adherence problems, and as a result, reduce the number of unplanned pregnancies and abortions.

Conclusions

In Spain, the percentage of women who use some form of contraception has decreased over the last 10 years. At the same time, the rate of induced abortion has also declined. This paradox could be explained either by the fall in the number of women aged 20 to 29 years old and the decreasing use of the condom and increasing use of LARC as contraceptive methods.

Conflicts of interest

The authors do not have any conflicts of interest to report in relation to this document. IL is a member of the advisory committee of Merck, Teva, Adamed, Exeltis and HRA Pharma.

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