

Induced Abortion in Italy: an Analysis Focusing on Foreign Women

Loghi Marzia ISTAT, loghi@istat.it
D'Errico Alessia ISTAT, derrico@istat.it
Burgio Alessandra ISTAT, burgio@istat.it
Rossana Cotroneo ISTAT, cotroneo@istat.it
Crialesi Roberta ISTAT, crialesi@istat.it

Key words: Induced abortion, Immigrants, Reproductive health, decision tree

Aims

The aim is to study the reproductive behaviours (induced abortion rates and total fertility rates) of foreign women resident in Italy compared to the Italian ones and to those of foreign women living in their own country.

We also try to find out socio-demographic factors that influence the recourse to induced abortion, and any differences between Italian and foreign women.

Material and Methods

Data on induced abortions (IA) and live births (LB) are used. Data on IA are collected since 1979 by the National Institute of Statistics of Italy (ISTAT), according to the law 194/78, along with Regions and the Ministry of Health. Data are collected using an individual form filled by the doctor that makes the operation to terminate the pregnancy. Information about the woman and the operation of induced abortion is requested. In particular, information on woman history is the following: date of birth, place of birth and residence, marital status, educational level, work status, nationality, past reproductive history (in term of number of live births, stillbirths, miscarriages and induced abortions), weeks of amenorrhea. The information on the operation includes: date of certification, urgency, approval for minors, place and type of operation, type of anaesthesia, length of stay in hospital, complications.

Data on LB are collected since 1999 by ISTAT through the survey "Live births registered in the population register". Available variables are the following: sex of the new born, date of birth, place of birth, nationality, parents' date of birth, parents' marital status, parents' nationality.

Data on fertility and abortion referred to other countries are available from the United Nations website.

To calculate rates related to foreign women living in Italy, estimations of resident foreign population by sex, age and nationality provided by ISTAT were used (years 2003-2008).

Countries have been divided into two sub-groups based on the socio-economic conditions: less developed countries (LDC) and developed countries (DC).

After using the above mentioned data for a preliminary descriptive analysis by nationality, age and marital status, a simulation model (decision tree) was applied.

Decision Tree is an artificial intelligence algorithm that can be used to classify and measure in an automated manner the information gain from various combinations of the predictors and to choose splits based on nodes that have the highest information gain. Each leaf node contains the number of correctly classified events and incorrectly classified events.

Moreover, decision tree, through its process of measuring and maximizing information gain, shows the attributes with the most information gain at the top of the tree with lesser influential attributes towards the bottom.

It is note that the decision tree process reveal more subtle details and relationships in the data that would be hard for a human to judge by looking at the histograms alone. These subtle differences appear farther down the tree.

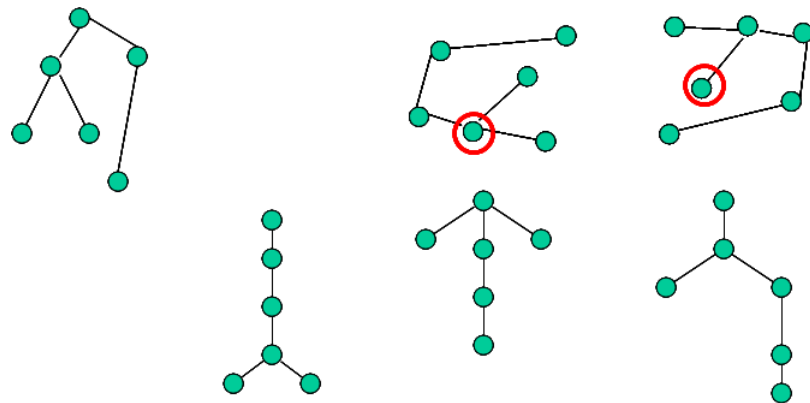


Figure 1: Decision Tree

In this study DT was applied to estimate the association among various factors and the risk to have an induced abortion between foreign women and Italian ones. The dataset used for the analysis included induced abortion and live births data for 2009, as target. The independent variables were nationality, marital status, age and geographical area of residence.

Preliminary results and discussion

A general description of the phenomenon showed that from 1980 to nowadays (2009 data) there has been a considerable descending trend for IA rates (from 15.3 cases per 1000 women aged 15-49 to 8.0). The trend can be divided into four phases: a) an irregular growing trend due to the progressive adjustment of the statistical survey and to a share of illegal abortions becoming legal (1980-1984); b) a constant and steady decrease of the abortion levels (1985-1994); c) a stable trend of abortion rates, because of the different recourse to abortion by marital status, age and nationality (1995-2004); d) the abortion levels start again decreasing (2005-2009).

The proportion of IAs made by foreign women raised from 6.6% in 1995 to 33.8% in 2009, whereas the proportion of foreign women aged 15-49 who are resident in Italy at January 1st 2010 was only 10.4%.

In Italy 28.3% of all IAs by foreign women is due to women coming from Romania, then for a better comprehension of the phenomenon it could be useful to focus our attention on this country.

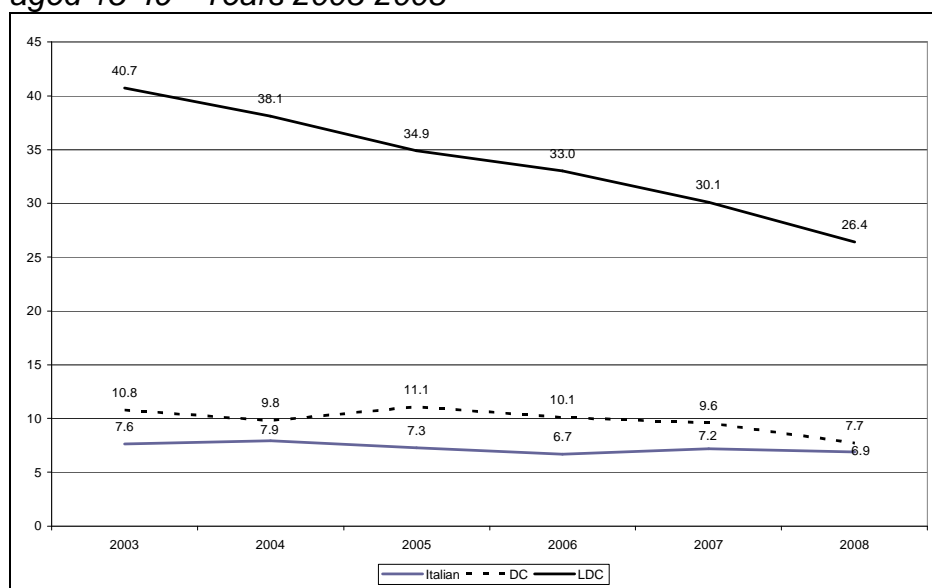
Rates calculated for Italian and foreign women (distinguished in LDC and DC) showed that foreign women have an higher recourse to abortion: the rate for women coming from LDC was more than 5 times higher than Italians in 2003 and about 3 times in 2008 (Figure 1).

In the last period, a decreasing trend of rates was observed in all groups: -54% for LDC foreign women, -40% for DC foreign women and -10% for Italian women.

Rates by age showed higher figures referring to younger women both Italian both foreign. The following Table 1 compares fertility and abortion figures among Italians, foreign women living in Italy and foreign women living in their countries.

With respect to reproductive behaviours of Italian women, foreign women had higher levels of fertility and abortion, regardless of where they live (in Italy or in their country); the only exception is the TFR referred to Romanian women living in Romania that is very low and equal to Italian one.

Figure 1 – Standardized induced abortion rates by group of nationalities, per 1000 women aged 15-49 - Years 2003-2008



Romanian women resident in Italy showed higher levels of induced abortion than their peers living in their country of origin.

The table shows also the peculiarity of Romanian women: despite of a low TFR (equal to 1.6, that is comparable with the Italian one), they have a very high abortion rate (35.8 per 1000 women aged 15-44). That's the reason why we focused the analysis on Romanian women to find out which factors influence most their recourse to IA.

Table 1 – Total fertility rate (TFT) and abortion rate (per 1000 women aged 15-44) by different groups of women. Year 2008

	Italian women	Women from LDC resident in Italy	Romanian women resident in Italy	Romanian women resident in Romania
TFR	1.3	2.3	1.6	1.3
Abortion rate	5.4	29.2	35.8	26.7

The decision tree model showed the variables with the most information gain at the top of the tree, while those with less influence on the phenomenon are at the bottom. In this study the variable on the top of the model associated to IA was marital status. In particular, the recourse to IA is more relevant for not married women (about 56%). In the tree, for this group the following variables were age and nationality: especially for young women (18-24 years) and Romanian ones (about 71%). Also for Italian nationality the recourse to IA among not married young women is still frequent (about 55%). Moreover for Romanian women the frequency of use of IA in the age class 25-34 years is to some extent relevant (about 32%).

For married women the recourse to IA was less relevant than live births (11% vs. 89%). Nevertheless it was identified a sub-group of Romanian women aged 35-49 years (65%) that should be monitored because the recourse to IA could be due to unwanted pregnancies and to difficulties in having access to contraceptive methods.

In conclusion, the Romanian women are a target population to address the policies for the protection of motherhood.

Conclusions and suggestions

The decreasing trend of IA rates among foreign women and the reduction of the gap with Italian women may be considered signals of a progressive integration of foreign women in our country and of changing behaviours towards motherhood, as occurred in the past to Italian women.

Monitoring the recourse to IA among foreign women, especially focusing on individual nationalities, provides an important contribution in order to plan targeted prevention policies. Studies aimed to identify the most “vulnerable” population groups are useful to establish specific interventions taking into account the characteristics of women coming from different countries and the socio-cultural aspects that have great impact on the recourse to abortions.

Bibliography

C. Muresan “Impact of Induced Abortion on Fertility in Romania” *European Journal of Population* 2008; 24:425–446

Giorgi P., Loghi M., Pierannunzio D. (2009), “Sources of the Italian induced abortion”, in Gourbin C. (ed.), *Santé de la reproduction au Nord et au Sud: de la coïncidence à l’action*, Chaire Quetelet 2004, Centre de recherche en démographie et sociétés, Université Catholique de Louvain, Laouvain-la-Neuve, pp. 423-438

Han, J. and M. Kamber (2001). ‘Data mining: concepts and techniques’. Morgan Kaufmann, San Francisco

ISTAT (vari anni), L’interruzione volontaria di gravidanza in Italia, collana Informazioni, Tavole di dati. <http://www.istat.it/it/archivio/45855>

ISTAT. Iscritti in anagrafe per nascita. (Banche dati). <http://demo.istat.it/>

Loghi M. (2009), box 3.2 “L’abortività volontaria tra le donne straniere”, in Ongaro F., Salvini S. (a cura di), *Rapporto sulla popolazione. Salute e sopravvivenza*, Il Mulino, pp. 81-83

Loghi M., D’Errico A., Spinelli A. (2009), *Abortività volontaria delle donne straniere*, in “Rapporto Osservasalute 2009. Stato di salute e qualità dell’assistenza nelle regioni italiane”, Osservatorio nazionale sulla salute nelle regioni italiane, Prex, pp. 243-247. www.osservasalute.it

M Gissler, I Fronteira, A Jahn, H Karro, C Moreau, M Oliveira da Silva, J Olsen,, C Savona-Ventura, M Temmerman, E Hemminki (the REPROSTAT group) “Termination of pregnancy in the European Union” *BJOG: An International Journal of Obstetrics & Gynaecology* 2012;119: 324–332

O. Zurriaga, M.A.Martinez-Beneito,A.Galmés Truyols, M. MarTorne, S. Bosch, R. Bosser, M. Portell Arbona “Recourse to induced abortion in Spain: profiling of users and the influence of migrant populations” *Gaceta sanitaria / S.E.S.P.A.S*, Vol. 23 Suppl 1 (December 2009), pp. 57-63

United Nations – Department of Economic and Social Affairs – Population Division – World Fertility Data. <http://www.un.org/esa/population/publications/WFD%202008/Main.html>

Vangen S, Eskild A, Forsen L. “Termination of pregnancy according to immigration status: a population-based registry linkage study”. *BJOG: An International Journal of Obstetrics & Gynaecology* 2008;115:1309–1315