

Female age at first pregnancy and work task: finding correlation and evolution over the past two decades in a Sicilian province

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Abstract

Background: the entrance of women in the workforce, due to a their growing cultural and, accordingly, social commitment, changed many aspects of their lives; the research or the maintenance of a job, especially during periods of severe economic crisis, leads to a delay of many physiological stage, maternity at first. The aim of this study is to verify and, if it really happened, to quantify an increasing age of first-time mothers in a sample of mothers in the province of Agrigento in the last 20 years, correlating any positive response to the work task performed.

Material and Methods: we have enrolled all primiparous women who gave birth in a hospital in the province of Agrigento, from January 1993 to December 2012; through retrospective analysis of medical records, prepared during hospitalization, we have assessed the following parameters: a history (family, physiological, pathological remote and

proximate, pharmacological and work), nationality, age at first birth, the task being performed, mode of delivery, days of hospitalization and possible fetal pathologies occurring in newborns. Then we have processed statistically data calculating mean, median, range and standard deviation. To assess statistical significance of the difference in the average age of the first pregnancy by professional category and decade, it was used the two-way anova test.

Results: the results show an overall increase in age of first-time mothers, especially in women workers with high profile professional tasks.

Discussion: the increase in the age at first pregnancy can't be considered a positive event, because of the increasing risk of complications and maternal-fetal pathologies that is directly proportional to aging.

KEY WORDS: aging, first pregnancy, infant, occupation, unemployed.

Introduction

In Italy, in employment, today, belonging to the female gender is still a disadvantageous condition in research and/or in maintaining a job, due to many aspects relating to the traditional role that women have always played, especially the protection of the family. This contrasts with data related to their training, though, as shown by statistics, the majority of graduates in the age group 30-34 years in our country, as well as in the European Union, are women (1). Eurostat data concerning the year 2012 in Italy show, indeed, an employment rate of 66.5% for men and 47.1% for women, compared to the European average of 69.6% and 58.5% respectively, and negative in this ranking we are exceeded only by Greece, Malta and Croatia (1). In times of global crisis, often to solve the economic problems of the family, women also accepted works below their ability, or, for the same task with fellow men, have not yet reached the equal pay, as well as in the rest of Europe, though more acceptable than the EU average (6.7% in Italy against EU 16.4%), or choose the part-time to combine family commitments, in this last case with overlapping European averages percentage (31%) (1). Added to this is the behavior required by some employers of private companies that, in the recent past, have discriminated against women, potentially absent to care for children or pregnancies in childhood, rejecting their hiring or offering only fixed-term contracts, or in the case of concluding a contract of indefinite duration, making their employees sign a

blank sheet or a resignation letter without date, documents that today, with the entry into force of the new rules, contained in the text of the Fornero's reform, no have any value, since the resignation should always be validated at the Territorial Directorate of Labour. Motherhood for working women represents a delicate moment for her personal history, both from the standpoint of psycho-affective development, and related social aspects. In the current historical period than in the past, there is a series of sociological change, determined by the economic crisis, such as expulsion from the family of origin in later times and moving forward all phases, with the existential increase in mean age at birth of first child and often working abandoned after the first pregnancy, especially in the southern regions and in women with low level of education as it detects ISTAT surveys (2).

Level of education is a relevant factor for the participation of women in the labour market: in fact leave or lose the job only 12% of newly-employed mothers in pregnancy with high level of education (3). This analysis of the socio-economic and organizational actuality that emerges from the annual report ISTAT 2012, relative to the entire nation, reflects the situation of the Sicily region, pouring in very difficult economic conditions, even before the deep crisis of recent years, has given and continues to give very few job opportunities to all and especially to women who, when they have difficulty in entering the world of work increasingly, encounter more obstacles than men to succeed professionally and occupy senior positions (3).

In Italy we also assist to a continuous decline in total births, a phenomenon that involves in a poor generational, with gradual ageing of the population: according to the ISTAT data, relating to the last decade, births of Italian citizens have been reduced compared with births of foreign residents, which show a growing trend at the same time: if in 2002 the born citizen were 504.615 and foreigners residing were 33.583 (latest data available), in 2011 newborns were 359.209 and 60.387 respectively (4, 5).

Very interesting are the data on maternal age: over 7% of births in 2012 has a mother of at least 40 years and moreover under 25 years old mothers reduce, 15% of the total. The average age for the first child is 31.4 years, but considering only mothers of Italian citizenship, the value rises to 32 years.

In particular, we can note that over 40 years old mothers are mostly Italian and mainly this phenomenon affects northern Italy and Sardinia (4).

Many questions arise about the reasons why many couples do not have children or have less than before and increasingly in advanced age. Italian women postpone first pregnancy that is not longer seen as a natural event, but rather as an informed choice influenced by many factors: the career, work and economic instability. Very often young women, during their most fertile period, are still engaged in studies or have not yet working stability, which leads to resort to contraception to prevent pregnancy.

Completed the training, when they choose to have a child, they often have few physiologically possibilities:

therefore the most common risk is reduced fertility. There is a maximum level of fertility reached around 25 years, and then a natural physiological decline, in both sexes, but particularly in women's events, starting from the 32-35 years (6, 7). Infertility is a medical condition that in the Western world affects 15-20% of couples. The fertility rate has remained relatively stable over the last 30 years, although the proportion of childless couples has increased, reflecting the trend of late pregnancies. This trend has important implications in view of age-dependent fertility, that starts at 35 years and decreases markedly after 40.

In fact, if on the one hand there's a physiological decrease in fertility potential, on the other hand there is an increased likelihood of damage of organs responsible for fertilization because of, for example, surgery, trauma to the gonads, genital infections, exogenous poisoning (8, 9).

Even the lifestyle doesn't facilitate the fruitfulness of torque: stress, also work-related, can interfere at different levels with reproductive processes, but negatively mainly with endocrine mechanisms that govern gametogenesis in both sexes (6-9).

Particularly hectic lifestyle affect negatively women workers who are subjected to multiple stressors.

Women's increasing investment on education and greater participation in the labour market means that roles and expectations are always higher with an increase of responsibilities, assignments and career opportunities.

These changes are very positive but, in the other side, require mothers to divide on multiple fronts, domestic and extra-domestic (10).

Many women are forced to leave or lost the job during the pregnancy or after the birth of children, temporarily or permanently, either because they find it difficult to reconcile working life with family life (especially for the rigidity of working time and the evening or night shifts play), and because the network of formal care services and children's assistance is not sufficient to meet the needs of the population. So working mothers, as long as they can, take advantage of parental leave, though, especially in the South of Italy, have a tendency to anticipate the return to work.

The early return is due to several reasons, diversified for education and family socio-economic status and level of responsibility and personal involvement due to the type of work done.

Women with the lowest socio-economic fall early at work mostly for economic reasons, while women with higher work responsibilities, in addition to economic reason, argue the necessity of their presence in the workplace.

The woman, returning to work, has the need to entrust their children to services or persons who can take care of them during working hours. More than half of parents entrust their children to the care of his grandparents because public facilities are very inadequate. Unfortunately are still very few in Italy, absent in Sicily, companies that offer parents the chance to follow the children up close with a nursery business.

The aim of this study is to determine whether and to what extent it has had in the last twenty years a gradual

increase of primiparous age in a sample of recent mothers in the province of Agrigento, in view of the problems related to the inclusion of women in the workplace, and by correlating any positive response on their task.

Materials and Methods

In our study we have enrolled all primiparous women who gave birth in a hospital in the province of Agrigento, from January 1993 to December 2012, for a total of 20 years. For all patients, through the retrospective analysis of the medical records written during the hospitalization, we have evaluated the following parameters: physiological, pathological and pharmacologic anamnesis, nationalities, age at first childbirth, job, mode of delivery, days of hospitalization.

For newborns we have assessed sex and any fetal disorders.

Then data were statistically processed calculating the mean, median, range, and standard deviation, the parameters applied on the entire 20 years sample and deducting data for 2 decades: the first from 1993 to 2002 and the second from 2003 to 2012; the findings were also related to the work performed, in search of the relationship between age at first calving and the performance of employees and functional role in hierarchical organization. To assess statistical significance of the difference in the average age of the first pregnancy by professional category and decade, it was used the two-way anova test, by PC program STATA/MP 11.2. A p-value < 0.05 was considered statistically significant.

Results

It's been examined a cohort of 6531 primiparous patients throughout the entire period. The average age at first birth for the whole sample was 27 years, with median 27 years, standard deviation 4.9, range 14-48 years for the entire span time considered (1993-2012), passing by average of 26.2 years, median 26, standard deviation 4.5 and 14-44 range of first decade, to 27.7 years average, median 28, standard deviation 5 years and range 14-48 of the second period.

In the entire sample, the housewives patients were 4169, corresponding to 63.83%; female workers, involved in various tasks, were 1931, 29.57% of the total; unemployed 312, 4.78% and finally the schoolgirls were 119, 1.82%.

Considering specifically the two time intervals, from the first to the second period there have been the following changes: from 71.78% to 57.09% of housewives, from 1.37% to 2.21% of schoolgirls, from 2.33% to 6.85% unemployed and from 25.52% to 33.85% of female workers (Fig. 1-3).

Throughout the period under consideration the average age of new mothers housewives was 25.4 years (median 25, St. dev. 3.97, range 14-44), of the students 20 years (median 18, St. dev. 4.44, range 14-37), of unemployed women of 30.6 years (median 31,

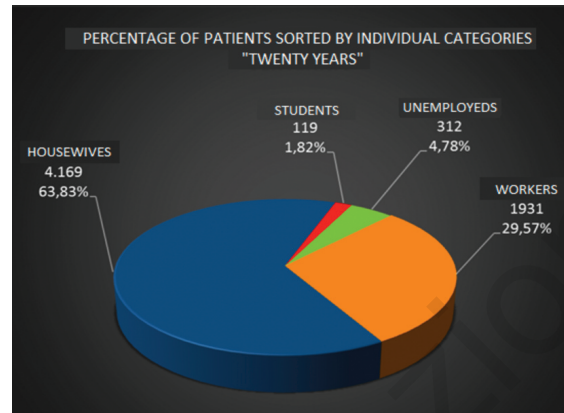


Figure 1 - Total examined sample in twenty years sorted by task performed.

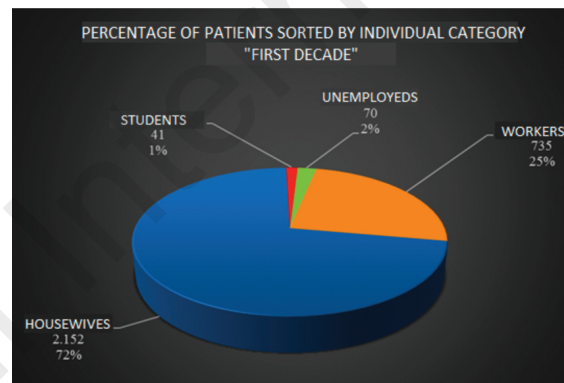


Figure 2 - Examined sample during the first decade 1993-2002 sorted by task performed.

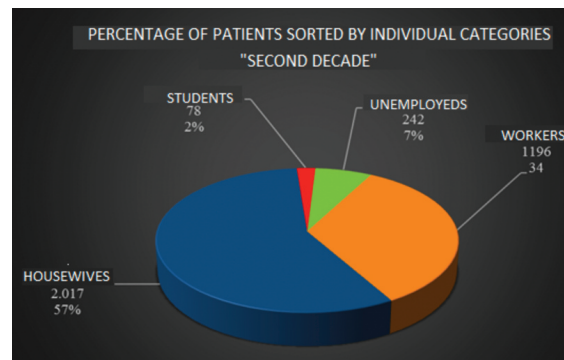


Figure 3 - Examined sample during the second decade 2003-2012 sorted by task performed.

St. dev. 3.97, range 19-44), and of the workers 31 years (median 30, dev. st. 4.29, range 19-48). Disaggregated data for the two decades, depending on the work tasks performed, are observed in Table 1.

The analysis of variance (Anova) two-way made considering the two decades *in toto* and individually, in relation to the employment of the women, was statistically significant, as the p value in all comparisons the result is always less than the 0.0001%.

Table 1 - Media, median, standard deviation and range of the examined sample sorted by decades and task performed.

	Average age	Median	Standard deviation	Range
Housewives I decad (n. 1840)	25.36	25	4.26	15-44
Housewives II decad (n. 2329)	25.41	25	3.72	16-41
Workers I decad (n. 606)	28.89	29	4.21	19-42
Workers II decad (n. 1325)	31.58	31	4.05	18-48
Students I decad (n. 38)	21.84	19	5.65	15-37
Students II decad (n. 81)	18.80	18	3.37	14-29
Unemployed I decad (n. 54)	26.93	27	3.89	19-36
Unemployed II decad (n. 258)	31.33	31	3.55	20-44

In particular, older new mothers were women with a higher educational qualification and a higher responsibility, and specifically doctor, lawyer, biologist, accountant, notary, architect and pharmacist with an average age of 35 years, a minimum age of 29 years for a patient architect and a maximum age of 48 years for two patients, a notary and an accountant.

Considering the mode of childbirth, it emerges that 4252 patients (65.10%) calved with spontaneous delivery throughout the decades and 2279 patients, corresponding to 34.90%, gave birth by caesarean section. The percentage of spontaneous delivery, from the first to the second decade, went from 69.05% to 61.76%; the caesarean section rose from 30.95% to 38.24% (Figg. 4-6).

The patients aged between 35 and 39 years were 400 and the 55% gave birth by caesarean section; those aged > 40 years were 83 and 72% of these gave birth by caesarean section. Emerging data about obstetric gynecological diseases indicate that on 6531 primiparous most frequent conditions were the miscarriage (106 patients equal to 1.63%), preterm birth (82 patients equal to 1.26%), removal of uterine myomas, past or pending caesarean section (73 patients equal to 1.2%), the 3rd quarter gestosis gravidarum with edema and hypertension (55 patients equal to 0.85%), removal of ovarian cysts (40 patients of 0.62%) and placental disorders (24 patients equal to 0.4%). The conditions or complications gradually less frequent were hypertension gravidarum, severe anemia and thrombocytopenia, removal of a ovary, the unilateral removal of Bartholin's gland, gestational diabetes, pre-eclampsia and eclampsia, endometriosis, ovarian

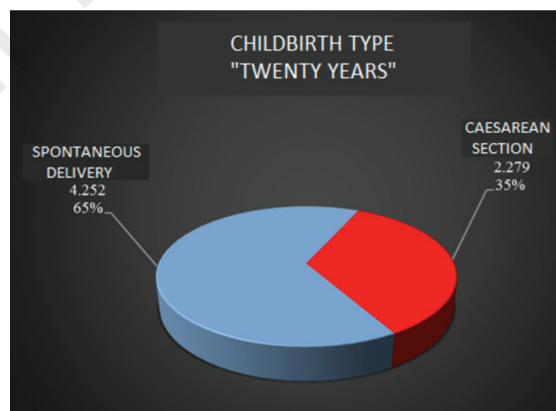


Figure 4 - Total childbirth during all examined period sorted by type.

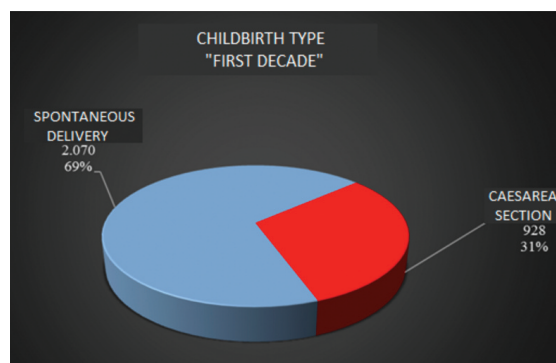


Figure 5 - Total childbirth from 1993 to 2002 sorted by type.

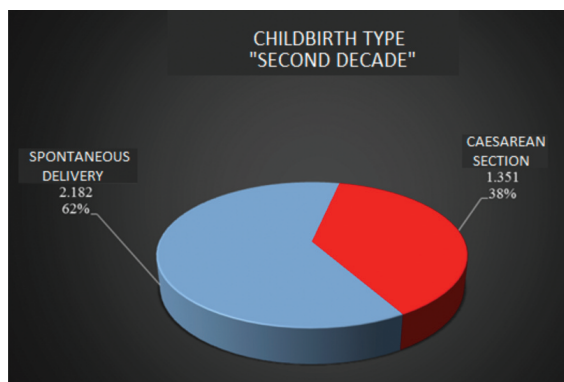


Figure 6 - Total childbirth from 2003 to 2012 sorted by type.

Table 2 - Examined patients sorted by nationality during the first and second decades.

	NATIONALITY OF THE PATIENTS		
	FIRST DECAD	SECOND DECAD	TWENTY YEARS
ITALIANS	2.939	3.202	6.141
FOREIGNERS	59	331	390
TOTAL	2.998	3.533	6.531

polyposis, ectopic pregnancy, removal of uterine polyps, the removal of the fallopian tube and congenital malformations the uterus. The patients with twin pregnancies were 44 (equal to 0.7%); 10 patients (equal to 0.15%) have practiced the voluntary termination of pregnancy and 10 patients (equal to 0.15%) have practiced the medically assisted pregnancy. The patients average hospital stay pending the two decades, was 4.8 days, going from an average of 6.43 days of hospitalization in the first decade, to 3.41 days of the second decade.

In the evaluation of nationality has shown, throughout twenty years, that 6142 patients were Italian and 390 patients were foreigners: from the first to the second decade the foreigners (especially from Romania) have quintuple, going from 59 to 331, while Italy has had an increase of 8.9% (Tab. 2).

Regarding the sex of newborns across the decades, males were 3359, corresponding to 51%, and females 3204, which accounted for 49%.

The stillbirth were 14.

Discussion

The analysis of the data showed that the mean age of primiparas in question has not changed much in the last two decades, rising from 25 to 27 years, from the first (1993-2002) to the second decade (2003-2012). The average age of the housewives and students remained almost unchanged in the transition from the first to the second period, on the contrary the age of

unemployed women and workers, which is the subject of our study, has increased, respectively, from 27 to 31 years for the first and from 29 to 32 years for the second. These latest figures reflect the national situation, which shows an average age of primiparas of 31.4 years, confirming the fact that employed women or seeking employment delay programming of first pregnancy (and any subsequent) because of the difficulties to conciliate the period of the pregnancy and puerperium with job, although in Italy there is a set of rules regulated by the "single text of the laws on the protection and support of motherhood and fatherhood" (Law 151/2001) that protects workers with regular employment contract, by prohibiting discrimination in access to employment based on sex, implemented through the reference to pregnancy, prescribing measures for the safety and health of workers during pregnancy and during first seven months of age of the child, guaranteeing a period of compulsory abstinence from work with maternity leave and by providing that for each child, not older than 8 years, parents have the right to refrain from work taking advantage of parental leave and prohibiting the dismissal of female workers from the beginning of pregnancy and all the period of prohibition from work, guaranteeing the right to return and the preservation of their jobs until the completion of one year of age of the child (11). Despite this statement, unfortunately, there are many organizational problems, especially, that hinder a peaceful insertion or the working mother's permanence in the workplace, such as the scarcity of public or company crèches in Sicily. A significant aspect to be considered and that emerges from this study, as comparable verified data from all over the world, is that complications of pregnancy becomes more common with advancing maternal age, namely: the miscarriage (106 patients), preterm birth (82 patients), gestosis gravidarum with hypertension (55 patients) and placental disorders (24 patients). Moreover cesarean increases with increasing age: indeed this study shows that among the aged primiparous, aged 35 to 39 years, 45% had given birth naturally and 55% with caesarean section; among primiparous older than or equal to 40 years, 72% had given birth with caesarean section and only 28% with natural birth.

In some case histories of primiparous older than or equal to 35 years and all those patients older than or equal to 40 years, and in the folders of primiparous with medically assisted pregnancy, the fetus was considered "valuable", probably to indicate difficult to conceive that son or to be able to conceive another one, for reduced fertility age-dependent. Similar studies alike our have been conducted: one on "management of infertility and pregnancy in women of advanced age" conducted in the USA, has identified as the most common complications and infertility, ectopic pregnancy, miscarriage and cesarean section (12-16).

Other studies have examined the factors that influence the ability of women to work during pregnancy, as the physiological changes associated with hormonal changes, maternal diseases, co-morbid complications midwives and issues related to the type of work done

(17-22). The findings are consistent with those we found in this study.

In the light of these considerations, it would be desirable, given the biological limits of child-bearing age, implement of benefits into employment for women, promoting their integration and their tenure, although in times of crisis it is not always easy to find appropriate solutions if, as seems clear, the business world has undergone especially in Southern Italy a significant depletion of productive reality.

It would be desirable to improve the reconciliation between work time and care, for example by promoting flexible working hours and other working methods such as tele-work and part-timers, although these types offer few career opportunity and progression.

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