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Differences between Italian and foreign women in the use of antenatal care

1. INTRODUCTION

Recent estimates, which include also illegal and non-resident populations, have shown that the number of foreigners in Italy has, over the last decades, grown to 4,838,000 people, representing approximately 8% of the current Italian population (ISMU, 2010). Such an increase is accompanied by a larger number of demographic events involving foreigners. For example, in 2010, approximately 14% of newborns in Italy were born to two foreign parents, while almost 19% had at least one foreign parent (Istat, 2011). These large figures motivated us to study the characteristics of foreign mothers in terms of reproductive health, with the aim of assessing possible inequalities in the access to and in the frequency of antenatal care which would exist between foreign and Italian women as well as between foreigners of different nations.

In order to correctly interpret the results presented here, it should be pointed out that the use of health care is influenced by the specific policies of the host country (Solé-Auró *et al.*, 2009, 2012). In Italy, access to antenatal care is *universal*, i.e. the Italian health service currently provides antenatal care free-of-charge to all women living in the country, regardless of their legal status (Legislative Decree n. 286/1998). Nevertheless, even though access to care is *universal*, there are organizational, cultural, socioeconomic and personal barriers (Delvaux *et al.*, 2001) which can preclude *universal* care from being *universal* in its practical implementation. In particular Delvaux *et al.* (2001) found that foreigners reported problems with making appointments in advance and other cultural barriers. Other studies identify these barriers in lack of knowledge about the health care system (Norredam *et al.*, 2004), language difficulties (Hernandez-Quevedo and Jimenez-Rubio, 2009), more emergency admissions by immigrant population (Lay *et al.*, 2006), as well as more general difficulties accessing the system (Stronks *et al.*, 2001). In the Netherlands, for example, Stronks *et al.* (2001) concluded that the use of more specialized health care is reduced in immigrant groups and that “their ethnic background

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in itself may be a factor that accounts for their consumption pattern, potentially because of a limited access to health care services by the immigrant groups” (Stronks, *et al.*, 2001, p.706).

Concerning antenatal care, Malin and Gissler (2009) have highlighted not only that women of foreign origin usually receive reduced amounts of care as compared to native women, but also that differences between the different migrant origins are important. Ethnic studies also highlight a delayed access to antenatal care among different ethnic minorities (Rowe *et al.*, 2008, Kuo *et al.*, 2008). By distinguishing ethnic groups in terms of country of birth of the mother, Alderliesten *et al.* (2007) have shown that in the Netherlands different delays in the timing of antenatal visit can be explained by cultural factors. A systematic review of British literature (Rowe and Garcia, 2003) has confirmed that women of Asian origin are more likely to delay the start of antenatal care than white British women: women of Pakistan and Indian origin had fewer antenatal visits than white British women.

Various studies carried out in different developed countries have also shown that the length of time lived in the host country, when other social/economic and health characteristics are held constant, has a marked effect on the utilization of health services. More recent immigrants have a much lower probability of receiving the proper healthcare, compared to both natives and foreign women that have lived in the host country for a longer period of time (Cho *et al.*, 2004, Sosta *et al.*, 2008). Being less structurally integrated into the country increases the risk of poor health mainly during pregnancy (Wolff *et al.*, 2008). Having a partner from the host country may also be a factor which induces foreigners to adopt behaviour that is more similar to that of the natives, as shown by Saenz *et al.*, (1994). Belonging to minority ethnic groups (Miller *et al.*, 1996, Rowe and Garcia, 2003), being born outside the country studied (Rowe *et al.*, 2008) or having foreign citizenship (Solé-Auró and Crimmins, 2008) appear to negatively influence the punctuality and regularity of access to the health system during pregnancy.

The review of international literature also shows that the use of health services depends not only on factors described above, but also on other factors such as individual demographic and socio-economic characteristics, the social and economic context (Leclere *et al.*, 1994, Reijneveld, 1998), as well as on the specific features of the health system. Actually, several studies carried out in North America, Australia and Europe associate late and poor access to antenatal services with low individual income or modest socio-economic status (Essex *et al.*, 1992, Sword 2003, Dwyer *et al.*, 2003), young maternal age (Buck *et al.*, 1992) and high parity (Delvaux *et al.*, 2001).

Nevertheless, another element may be relevant for interpreting the use of health care by foreign populations. For instance, the so-called healthy immigrant effect (Burón *et al.*, 2008, Muennig and Fahs, 2002) can explain the lower utilisation rates which are exhibited by immigrant populations.

Analyzing the Italian case, Cacciani *et al.* (2006) have explained a reduced use of health services and lower rates of care among foreigners with a good health status and with the existence of administrative, linguistic, and cultural barriers. Spinelli *et al.* (2003) showed a poorer quality of care among the indicators of antenatal care for the foreign women compared to the Italians. Lauria and Andreozzi (2012) confirmed how foreign women are less able to take advantage of health system opportunities and seemed to lack necessary information. Fedeli *et al.* (2010), focusing on the Veneto region, extracted differences between Italian, regular and irregular immigrants concerning reproductive behavior, health status, and patterns in the access to health services. Other authors have previously highlighted the greater difficulty experienced by foreign women in obtaining access to information and social/health services (Bona *et al.*, 2001). After the introduction of the Legislative Decree n. 286/1998, which also extended the right to antenatal care to irregular immigrants, Spinelli *et al.* (2002) found this difficulty had attenuated. As shown by other international studies (Saenz *et al.*, 1994), differences between foreign and Italian women seem to decrease when the partner is Italian or natives (Mussino, 2010).

Based on these observations, we stress that in the case of foreigners it is important to include in the analysis information concerning their legal status in the host country (Carrasco-Garrido *et al.*, 2007). However, a correct estimation of inequalities between Italian and foreign women must also take into account differences in demographic and socio-economic characteristics.

The aim of this study is therefore to compare access to and adequacy of antenatal care between Italian and foreign women in Italy, where the access to care is *universal*. The working hypotheses to be tested here are summarized as follows:

1. foreign women display a later and lower degree of attendance of antenatal care as compared to Italian women;
2. different patterns of behaviour exist within the foreign population, which in turn are associated with different national origins;
3. the inadequacy of antenatal care is less for foreign women who have high level of structural social integration: thus, having residency in Italy and having an Italian partner are both protective factors;
4. controlling for the demographic and socioeconomic characteristics reduces differences between foreign and Italian women.

2. DATA AND METHODS

2.1 *Data*

The study is based on data from the Certificates of Healthcare at Delivery (CeDAPs). The CeDAPs are a detailed mapping of births, deliveries and

outcomes of conception, collected by the Italian Ministry of Health which covered 84%¹ of all births in Italy in 2003 (Ministero della Salute, 2005). The CeDAPs data are collected by the Ministry of Health and are passed to the National Institute of Statistics (Istat). In 2003, Istat made a special effort to test and validate the CeDAPs, integrating various administrative and survey data (e.g. P4-Survey on Live Births and Birth Sample Survey). This work allowed the validation of the main demographic variables, such as the citizenship of the parents of the newborn child. The experiment was conducted only for the year 2003², which is why we use this specific year for our analysis. The data form includes a section concerning the pregnancy, which provides information on the care that the woman has received during her pregnancy (i.e. time of first visit, number of visits, number of scans, antenatal diagnosis). It also includes a section on the demographic and socio-economic characteristics of the parents. This information allows us to analyse the social and health aspects of antenatal care of all women who have given birth in Italy, including the various components of the foreign population. With respect to foreign³ women, we have made a distinction between those who are resident in Italy and those who are “otherwise present” (i.e. either legal non-resident, irregular and illegal). This differentiation enables us to analyse whether one aspect of structural integration (namely residency status) helps in reducing inequalities in healthcare between Italian and foreign women. Since this study aims to compare antenatal care between Italians and foreigners, we have intentionally excluded data concerning mothers for whom citizenship information is not available. Moreover, we have excluded the pregnancies obtained with Assisted Reproductive Technologies (ART), because they have to schedule their first visit when they go through the procedures. So, the population analysed includes 442,773 women, of whom 395,070 are Italians, 43,932 are foreigners with residency and the remaining 3,771 are foreigners “otherwise present” (respectively 89.2% Italians, 9.9% foreigners with residency and 0.9% foreigners “otherwise present”).

¹ Data for 2003 is missing for the regions of Molise and Calabria and for the autonomous province of Bolzano.

² The years 2002-2003 were a turning point in the history of immigration in Italy: the foreign resident population grew by about 630,000 individuals in just two years, and about half of these flows were women. In these two years alone more than 94,000 new-born with at least one foreign parent were registered in the municipalities. In the following years, the inflows remained high and the main communities in Italy began to show signs of stabilization. While the most important laws related to immigration (Law 40/1998 Legge Turco-Napolitano and Law 189/2002 Legge Bossi-Fini) were approved before 2003, and illegal immigration was still not considered a crime. Thus, births registered by foreign women were independent of their immigrant status. For all these reasons we believe that the choice of 2003 does not affect our results. The confidence in our findings is further strengthened by similar conclusions drawn in other recent studies (Morrone *et al.*, 2004, Lauria and Andreozzi 2012, Lauria *et al.*, 2013).

³ The foreign population is defined by using the information on citizenship.

2.2 *Indicators of antenatal care*

Three indicators of frequency and adequacy of antenatal care were constructed, based on national and international guidelines⁴.

CeDAPs report the time of the first antenatal visit, measured in weeks. Since both Italian and international guidelines recommend that the first visit should take place by the end of the 12th week, we have constructed an initial indicator based on the following categories: within the 12th week (on time), from the 13th to the 16th week (moderate delay), after the 16th week (considerable delay). The latter category includes those cases where no antenatal visit takes place at all.

For the number of visits, we use the indicator already classified in the CeDAPs: none, up to 4, more than 4. Note that this classification is consistent with international guidelines, which recommend 4 visits, but not with the Italian ones, which prescribe 8.

The third indicator relates to the number of scans received by the women during her pregnancy: since national guidelines prescribe 3 scans⁵, we have classified the number of scans as 1 or 2, 3 or 4, and more than 4.

2.3 *Multivariate approach and independent variables*

We first performed a descriptive analysis based on the three indicators just described. Next, multinomial logistic regression⁶ models were used in order to identify the factors which differentially influence Italian and foreign women's access to antenatal care. We use the time of the first visit as the dependent variable for the following reasons: early antenatal care makes it possible to identify and to properly monitor problematic pregnancies, as well as to inform women about suggested antenatal care and health behaviour during pregnancy. Another advantage is that both Italian and WHO guidelines agree in recommending that the first visit should take place within the 12th week. This makes it possible to assess punctuality (and therefore lateness) of the first access to antenatal care services in an unambiguous way, both at the national and international level. Finally, this variable does not suffer from the excess of medical treatments which often characterizes pregnancy in Italy, and is therefore well-suited to investigating situations where antenatal care is likely to be insufficient.

By means of this indicator, we are able to evaluate simultaneously the risk of having the first visit between 12 and 16 weeks (moderate delay) or

⁴ Italian guidelines: Ministerial Decree, n. 245/1998. International guidelines: Villar for the WHO Antenatal Care Trial Research Group, 2002; Banta for Health Evidence Network-WHO Regional Office for Europe, 2003.

⁵ Let us keep in mind that the WHO suggests a single scan during pregnancy.

⁶ The statistical software used to conduct the analysis is Stata 11.

after 16 weeks (considerable delay), as compared to having it within the first 12 weeks (on time). The nominal, multiple-category nature of the dependent variable allows us to work with a multinomial logistic regression model (Hosmer and Lemeshow, 2000).

In order to test our hypotheses, we have constructed two different models, one for all women and the other just for foreign women. Both models include the following independent variables⁷:

1. social/demographic characteristics of the women: age (< 24, 25-29, 30-34, 35-39, 40+), citizenship (Italian vs Foreign), education (as measured by a categorical variable with three possible values, namely low, medium and high level, corresponding respectively to the person being educated up to a low secondary school level, up to an upper secondary school level or at the university level). Concerning foreigners, two characteristics are taken into account in order to measure the level of structural integration: residency status (with residency vs “otherwise present”) and national origin (the country of citizenship is aggregated in developed countries, Romania, Albania, Morocco, China, other high migration pressure countries)⁸;

2. child’s area of birth within Italy as a proxy of context of pregnancy (North-West, North-East, Centre, South and Islands), to take account of the strong north-south gradient in socio-economic and healthcare conditions typical of the Italian context;

3. social/demographic characteristics of the partner: citizenship (Italian/foreign), education (low, medium and high level).

3. RESULTS

3.1 *Level and timing of antenatal care*

Table 1 provides the distribution of the indicators by mother's citizenship. Time of first antenatal visit shows how utilization of the health service takes place sooner among Italian women (94% before 12 weeks of pregnancy) than among foreign women (80% and 68% in the case of foreign women with residency and those “otherwise present”, respectively). But above all, this indicator reveals that a much higher proportion of foreign women - almost 25% in the case of those present without residency - make their initial contact after the 16th week of pregnancy. This latter group thus displays a marked delay.

Regarding the number of visits, it emerges that only 0.6% of Italian women fail to have any visit at all, while the same figure exceeds 2% in the

⁷ See table A1 in the Appendix.

⁸ We have focused on Albanian, Moroccan, Romanian and Chinese women because they represent the four largest immigrant groups residing in Italy (both presently and in 2003, i.e. at the time of the study). Moreover, these groups have different migratory histories, characteristics and distributions in Italy (Mussino and Strozza, 2012a).

case of foreign women with residency and 9% in the case of foreign women “otherwise present”. It also appears that 19% of Italian women have 1-4 antenatal visits, which is insufficient according to Italian guidelines, which recommend having 8 visits. Among foreign women, 25% with residency and 32% “otherwise present” fall short of the minimum recommended visits.

The greater utilization of antenatal care by Italian women is also evident from the number of scans performed during pregnancy: almost 55% have more than 4 scans; the same pattern of behaviour is exhibited by 26% of foreign women with residency and by 14% of those “otherwise present”, which provides additional confirmation of the fact that they experience fewer medical treatments than native born Italian women.

Table 1 – *Indicators of antenatal care by citizenship, residency status and national origin (percentage values)*

Antenatal care	Italian citizenship	Foreign citizenship					
		Residency status		National origin			
		With residency	Otherwise present	Romania	Albania	Morocco	China
Time of first visit (weeks):							
<=12	94.3	79.6	68.4	74.9	78.1	75.4	62.0
13-16	3.2	8.7	7.9	8.8	9.2	10.4	11.2
>16	2.5	11.8	23.7	16.2	12.7	14.2	26.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of visits:							
0	0.6	2.3	9.4	6.7	2.3	2.7	4.8
1-4	19.4	25.4	32.0	27.4	27.4	29.7	42.3
>4	80.1	72.4	58.6	65.9	70.4	67.6	52.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of scans:							
1-2	2.4	15.4	33.0	21.6	15.2	18.5	36.5
3-4	43.0	58.6	52.7	57.7	60.6	63.6	52.3
>4	54.7	26.0	14.3	20.7	24.2	17.9	11.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: In the variable number of scans missing values are recorded with a zero so it is difficult to estimate the number of women with no scans at all. According to multipurpose system data this percentage is 0.1 (our elaboration on “Indagine di salute e ricorso ai servizi sanitari 2004-2005”), so we assume that the data recorded with a zero is missing.

Source: our processing of CeDAP data 2003.

In order to assess whether there are different patterns of behaviour by national origin, we have analysed the frequency and timing of antenatal care in the four largest communities of foreigners: Romanians, Albanians, Moroccans and Chinese. These groups altogether represent approximately 42% of foreign women with residency and 54% of those “otherwise present”.

Table 1 shows that there are different profiles by national origin. By considering the whole set of indicators, it is possible to infer that both Chinese and Romanian women have the lowest access to health services during pregnancy. Indeed, it emerges that, when compared to the other two communities, a higher percentage of Chinese and Romanian women have the first visit very late or have no visit at all, and just one or two scans. This may be due partly to different behaviours by national origins, and partly to structural barriers that women “otherwise present” can experience. In fact, in these two groups, the proportion of foreign women “otherwise present” is higher compared to the other two foreign groups examined⁹. Finally, focusing on the number of visits, we see that the percentage of women who make no use of antenatal care during pregnancy is lower in their home country than in Italy: 3%, 6%, 10% and 32% respectively for Albanians, Romanians, Chinese and Moroccans (WHO, 2009).

3.2 *Multivariate analysis*

The bivariate analysis just described has shown that foreign women experience difficulties in gaining access to the antenatal care, reflected by the postponement of the first visit, the high proportion without any visits and the small number of scans compared to Italian standards. In order to better analyse this situation of disadvantage, we have chosen to test our hypotheses by means of a multinomial logistic regression, using the time of first visit as the dependent variable, as already illustrated in the method section. In this work we focus on the relative risk ratio (RRR) of experiencing a considerable delay (Table 2)¹⁰.

The two variables, citizenship and residency status, have been combined and considered in an initial base model as the only independent variable: the risk of having the first visit very late is significantly higher for foreign women, especially for those “otherwise present” (RRR = 5.61 and 13.15 respectively). Lack of citizenship and residency status indicates difficulties in the process of structural integration. Exactly the same pattern is observed for the combination of citizenship and residency status in the complete model when we check for the other covariates, although the intensity of risk is lower (RRR decreases to 2.64 and 5.06 respectively). While a strong difference between foreign and Italian mothers still persists, especially if they are “otherwise present”, these results suggest that the socio-demographic characteristics also significantly contribute to explaining the delay in access to antenatal care. The profile by age features a U-shaped trend, i.e. there is a greater risk of having the first visit very late among the younger and older age groups. Women with a low level of education have a higher risk of delay, while there does not seem to be any significant difference between those with an average

⁹ The percentage of foreign women “otherwise present” is 17.5% for Romanians, 6.3% for Albanians, 3.1% for Moroccans 15.9% for Chinese.

¹⁰ The risks for moderate delay were calculated, but are not listed in this work.

(secondary school) level and those with a high (university) level of education.

Women with a foreign partner have a higher risk of having their first visit after 16 weeks, whereas intermarriage can facilitate the socio-structural integration into the mainstream population. The partner's level of education has the same influence as the mother's. Giving birth in the South of Italy appears to be a disadvantage: being pregnant in this area is a factor which hinders the prompt provision of antenatal care. Indeed, a greater risk is observed of considerable delay in benefiting from antenatal services.

The model with only foreign women allows us to better test the two hypotheses regarding structural integration, i.e. the importance of being officially resident and the influence of having an Italian partner, as well as differences between areas of origin. As hypothesized, being "otherwise present" significantly increases the risk of having the first visit very late. Note also that the intensity of RRR decreases less than in the previous set of models when we introduce the other covariates in the model for foreigners, while its significance is unaltered. This is mainly caused by the fact that the socio-demographic characteristics differ less between foreigners than they do between Italian and foreign mothers. Lack of Italian citizenship and especially lack of residency appear to be a significant factor in access to antenatal care. A low educational level on the part of the mother is a risk factor (as in the model for all women), while a high level of education turns out to be a protective factor only for foreign women. Having an Italian partner is associated with more timely access to health services, but in this case the most disadvantaged are single women.

Giving birth in the North East significantly increases the probability of a delay, while giving birth in the Centre and - rather surprising - also in the South decreases it. This result contrasts with that obtained for the model for all women. This is probably caused by self-selection on the part of the foreign women becoming mothers in the South of Italy. Previous research (Strozza, 2008) has in fact shown that the foreign population is less settled in the South, but women who decide to have a child there are generally more stable in Italy than the foreign population as a whole. This is also confirmed by the percentage of foreign mothers with residency, which is higher in the South than in other geographical areas of Italy.

Moreover, the country of origin has a significant impact, as expected. The relative risk ratio of a late first visit is higher for Chinese and Romanian women, as compared to women from other countries. Considering we controlled for residence status, this result may be affected by a cultural effect and not only by a structural explanation as previously concluded in the descriptive finding. In fact, in order to test this hypothesis, we performed additional simulations by combining the two variables (national origin and residency status). The results of this model show that, even when considering women with residency, Romanians and Chinese exhibit a higher risk. This tendency is even more pronounced when considering the "otherwise present"¹¹. In sum-

¹¹ Results of the combination are not shown.

mary, individual demographic factors do matter, but the structural factors (especially ones comprising the socio-legal and structural context surrounding immigration and citizenship) can facilitate the access to the health system.

Table 2 – *Models of multinomial regression for all women and for foreigners only (relative risk ratios for considerable delay and its significance)*

	All women		Immigrants only	
	Base model	Complete model	Base model	Complete model
<i>Citizenship and residency status:</i>				
Italian	1	1	-	-
Foreign with residency	5.61 ***	2.64 ***	1	1
Foreign otherwise present	13.15 ***	5.06 ***	2.34 ***	1.82 ***
<i>Age at childbirth:</i>				
< 24		1.74 ***		1.31 ***
25-29		1.15 ***		0.99
30-34		1		1
35-39		1.05 *		0.98
40+		1.32 ***		1.14
<i>Education:</i>				
High		0.98		0.79 ***
Medium		1		1
Low		1.42 ***		1.51 ***
<i>Partner's citizenship:</i>				
Italian		1		1
Foreign		2.43 ***		2.11 ***
Single/missing		1.39 ***		2.37 ***
<i>Partner's education:</i>				
High		1.05		1.09
Medium		1		1
Low		1.29 ***		1.38 ***
<i>Child's area of birth:</i>				
North west		1		1
North east		1.03		1.14 ***
Centre		0.84 ***		0.75 ***
South		1.11 ***		0.72 ***
<i>National origin:</i>				
Developed countries				1
Romania				2.00 ***
Albania				2.04 ***
Morocco				2.97 ***
China				2.21 ***
Other HMP countries				4.38 ***
Pseudo R2	0.044	0.064	0.006	0.046

Notes: The model takes account of the missing figures those RRRs are not presented in the table. HMP stands for "high migration pressure". *** < 0.001; ** < 0.01; * < 0.1.

Source: our processing of CeDAP data 2003.

4. DISCUSSION AND CONCLUSION

This work is based on CeDAPs, which collect information concerning the entire universe of women who have given birth in Italy, including all foreign women who have delivered in the country. By using this source, we do not have the problems of sample selection related to, e.g., language knowledge or territorial mobility. These data allowed us to identify differences between Italian and foreign women, by considering the different origins and various level of structural integration of the foreign population. Note that this is usually not possible, even with administrative data. Indeed, previous Italian studies are based on local or survey data, which are often not representative of the foreign population, especially the proportion without residency. However, it is important to remember that in 2003, CeDAPs were a relatively new survey, the regions of Molise and Calabria and the autonomous province of Bolzano were still missing and the collection of information was still not uniform throughout the country. Furthermore, CeDAPs do not include any information concerning the time of arrival in Italy, i.e. we do not know whether all foreign women who gave birth in Italy were already present in the country when their pregnancy started. Nonetheless, previous studies, which simultaneously addressed fertility and the migration patterns, show that the risk of moving to one host country in the year before the delivery is quite low, see e.g. Bueno and Devolder (2010) for the case of Spain, and Mussino and Strozza (2012a,b) for the case of Italy. Another limitation of the dataset is represented by the fact that the classification of some indicators we used is not consistent with international guidelines. We have remedied this situation by choosing appropriate dependent variables. Therefore, we can safely assume that the shortcomings mentioned above are unlikely to affect our results.

In accordance with published findings and with our hypotheses, the results show that there are strong underlying inequalities in the healthcare received during pregnancy between Italian and foreign women, both in terms of promptness and in terms of intensity of care (Morrone *et al.*, 2003, Lauria and Andreozzi, 2012, Lauria *et al.*, 2013). The disadvantage is less in the case of foreign women who are more structurally integrated, i.e. with residency in Italy or with an Italian partner. This finding is in line with other international studies, which suggest that minority ethnic groups and foreign women, especially those without residency, experience a delay in their first contact with antenatal care services (Kuo *et al.*, 2008, Rowe *et al.*, 2008, Malin and Gissler, 2009), and that a greater level of structural integration reduces this disadvantage, both in terms of promptness and in terms of appropriateness (Wolff *et al.*, 2008). Partner's citizenship appears to play a role in the timing of antenatal care: having a foreign partner increases the risk of delayed access to the first visit.

Socio-demographic diversities explain a large proportion of the differences between Italian and foreign mothers in access to antenatal care, but only a small proportion of differences among foreigners. The level of structural

integration remains a significant factor which explains differences in the timing of access to antenatal care in the Italian health system. The analysis performed on the four largest communities of foreigners has shown that health seeking behaviours vary by national origin. These differences may also be attributed to the specific cultural context of each community, which affects ease of access to knowledge about or use of the health service facilities, as suggested by Shaffer (2002), Tsianakas and Liamputtong (2002) and Alderliesten *et al.* (2007). Additionally, these differences may also be related to different migration histories, i.e. how settled each community is and how long it has been in Italy. In particular, it turns out that the Chinese and Romanians exhibit a more marked delay in the first antenatal visit compared to foreigners of other nationalities. In the case of Chinese women, it is worth stressing that they often make use of parallel forms of healthcare provided by members of their own community. Moreover, the linguistic differences between the country of origin and the host country presumably play an important role in the difficulty of access to antenatal care experienced by Chinese women. In the case of Romanians, on the other hand, the delay may be explained in terms of the recent nature of their immigration to Italy.

Similar to earlier studies on specialized care (Hernandez-Quevedo and Jimenez-Rubio, 2009), this study confirms that, regardless of their level of structural integration, immigrants experience barriers in accessing antenatal care. Understanding the very nature of these barriers is essential for the design of more effective health policies. Considering that foreign women may constitute a risk group, health policies should specifically target them. It is important to investigate the access to health services, in order to better understand their health needs, remove barriers to health care and eventually promote adequate programs and policies (Cacciani *et al.*, 2006). The delay in the access can also contribute to overcrowding of emergency services. Hernandez-Quevedo and Jimenez-Rubio (2009, 375) in Spain found that “they can use hospital emergency services to overcome, to some extent, the barriers that they face in accessing specialist services.” Even though the Italian law guarantees the right to receive the necessary antenatal care free of charge for all women in the country regardless of legal status, this study shows that foreign women without residency have considerable disadvantages, probably due by structural differences (i.e. socio-legal and institutional barriers regarding citizenship and residency). This finding may also be explained by the fact that the illegal and irregular component of this group of women is generally afraid of being reported to the police by the health service, although this practice is forbidden by Italian law. The results presented in this study prompt us to question the effectiveness of the policies for providing information to foreign women and, as Lauria and Andreozzi (2012) have already pointed out, how the presence of cultural mediators, adequate health personnel training in communication and information skills could be a first step towards ensuring better quality and more equitable access to prenatal care and health services in general for foreign women.

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References

- ALDERLIESTEN M., VRIJKOTTE T., VAN DER WAL M., BONSEL G. (2007), “Late start of antenatal care among ethnic minorities in a large cohort of pregnant women”, *Bjog*, 114, 1232-1239.
- BANTA D. (2003), *What is the efficacy/effectiveness of antenatal care and the financial and organizationa implications*, WHO Regional Office for Europe (Health Evidence Network), Copenhagen.
- BONA G., ZAFFARONI M., CATALDO F., SANDRI F., SALVIOLI G.P. (2001), “Infants of immigrant parents in Italy. A national multicentre case control study”, *Panminerva Medica*, 43(3): 155-159.
- BUCK G.M., MAHONEY M.C., MICALEK A.M., POWELL E.J., SHELTON J.A. (1992), “Comparison of Native American Births in Upstate New York with Other Race Births, 1980-86”, *Public Health Reports*, 107(5): 569-575.
- BUENO X., DEVOLDER D. (2010), Interactions between fertility and migration for foreign Immigrants in Spain, Paper presented at PAA 2011 Annual Meeting, Washington, DC, March 31 - April 2.
- BURÓN A., COTS F., GARCIA O., VALL O., CASTELLS X., (2008), “Hospital emergency department utilization rates among the immigrant population in Barcelona Spain”, *BMC Health Services Research*, 8, 51-60.
- CACCIANI L., BAGLIO G., ROSSI L., MATERIA E., MARCECA M., GERACI S., SPINELLI A., OSBORN J., GUASTICCHI G., (2006), “Hospitalisation among immigrants in Italy”, *Emerging Themes in Epidemiology*, 3(4): 11 pages.
- CARRASCO-GARRIDO, P., GIL DE MIGUEL A., HERNÁNDEZ BARRERA V., JIMÉNEZ-GARCÍA R. (2007), “Health profiles, lifestyles and use of health resources by the immigrant population resident in Spain”, *European Journal of Public Health*, 17, 503-507.
- CHO Y., FRISBIE W.P., HUMMER R.A., ROGERS R.G. (2004), “Nativity, Duration of Residence, and the Health of Hispanic Adults in the United States”, *International Migration Review*, 38(1): 184-211.

- DELVAUX T., BUEKENS P., GODIN I., BOUTSEN M. (2001), “Barriers to prenatal care in Europe”, *American Journal of Preventative Medicine*, 21(1): 52-59.
- DWYER C., COOKE H., HORT K. (2003), “Bringing accessible antenatal care to disadvantaged women in outer Western Sydney”, *Australian Journal of Primary Health*, 10(3): 67-75.
- ESSEX C., COUNSELL A.M., GEDDIS D.C. (1992), “The demographic characteristics of early and late attenders for antenatal care”, *Australia and New Zealand Journal of Obstetrics and Gynaecology*, 32(4): 306-308.
- FEDELI U., ALBA N., LISIERO M., ZAMBON F., AVOSSA F., SPOLAORE P. (2010), “Obstetric hospitalizations among Italian women, regular and irregular immigrants in North-Eastern Italy”, *Acta Obstetrica et Gynecologica Scandinavica*, 89(11): 1432-7.
- HERNANDEZ-QUEVEDO C., JIMENEZ-RUBIO D. (2009), “A comparison of the health status and health care utilization patterns between foreigners and the national population in Spain: New evidence from the Spanish National Health Survey”, *Social Science & Medicine*, 69, 370-378.
- HOSMER D.W., LEMESHOW S. (2000), *Applied logistic regression*, Wiley-Interscience, New York.
- ISMU (2010), *Quindicesimo rapporto sulle migrazioni 2009*, Franco Angeli, Milan.
- ISTAT (2011), *Popolazione straniera residente in Italia 2010*, Statistiche in Breve, ISTAT, Rome.
- KUO T.M., GAVIN N.I., ADAMS E.K., AYADI M.F., (2008), “Racial Disparities in Medicaid Enrollment and Prenatal Care Initiation Among Pregnant Teens in Florida: Comparisons Between 1995 and 2001”, *Medical Care*, 46(10): 1079-1085.
- LAURIA L., ANDREOZZI S. (2012), *Percorso nascita e immigrazione in Italia: le indagini del 2009*, Rapporti ISTISAN , 11/12, ISSN 1123-3117.
- LAURIA L., BONCIANI M., SPINELLI A., GRANDOLFO M.E. (2013), Inequalities in maternal care in Italy: the role of socioeconomic and migrant status, *Annali dell'Istituto Superiore di Sanità*, Vol. 49(2): 209-218. DOI: 10.4415/ANN_13_02_12.
- LAY B., LAUBER C., NORDT C., ROSSLER W. (2006), “Patterns of inpatient care for immigrants in Switzerland. A case control study”, *Social Psychiatry and Psychiatric Epidemiology*, 41, 199-207.
- LECLERE F.B., JENSEN L., BIDDLECOM A.E. (1994), “Health care utilization, Family context, and adaptation among Immigrants to the United States”, *Journal of Health and Social Behaviour*, 35, 370-384.
- MALIN M., GISSLER M. (2009), “Maternal care and birth outcomes among ethnic minority women in Finland”, *BMC Public Health*, 20, 9-84.

- MILLER M., CLARKE L.L., ALBRECHT S.L., FARMER F.L. (1996), “The Interactive Effects of Race and Ethnicity and Mother’s Residence on the Adequacy of Prenatal Care”, *The Journal of Rural Health*, 12(11): 6-18.
- MORRONE A., SPINELLI A., GERACI S., TOMA L., ANDREOZZI S. (2003), *Immigrati e zingari: salute e disuguaglianze*, Rapporti ISTISAN03/4, ISSN 1123-3117
- MINISTERO DELLA SALUTE (2005), Certificato di assistenza al parto (Cedap), analisi dell’evento nascita-anno 2003, Italian Ministry of Health, Rome.
- MUENNIG P., FAHS M.C. (2002), “Health status and hospital utilization of recent immigrants to New York City”, *Preventive Medicine*, 35, 225-231.
- MUSSINO E. (2010), The Fertility of Foreign Women Resident in Italy: From the Construction of Longitudinal Data to the Analysis of Behavior, PhD Thesis, National library of Rome and Florence.
- MUSSINO E., STROZZA S. (2012a), “Does citizenship still matter? Second birth risks of resident foreigners in Italy”, *European Journal of Population*, 28(3): 269-302.
- MUSSINO E., STROZZA S. (2012b), “The fertility of foreign immigrants after their arrival: The Italian case”, *Demographic Research*, 26(4): 99-130.
- NORREDAM M., KRASNIK A., SORENSEN T.M., KEIDING N., MICHAELSEN J.J., NIELSEN A.S. (2004), “Emergency room utilization in Copenhagen: a comparison of immigrant groups and Danish-born residents”, *Scandinavian Journal of Public Health*, 32, 53-59.
- REIJNEVELD S.A. (1998), “Reported health, lifestyles, and use of health care of first generation immigrants in the Netherlands: do socioeconomic factors explain their adverse position?”, *Journal of Epidemiology & Community health*, 52(5): 298-304.
- ROWE R.E., GARCIA J. (2003), “Social class, ethnicity and attendance for antenatal care in the United Kingdom: a systematic review”, *Journal of Public Health Medicine*, 25(2): 113-119.
- ROWE R.E., MAGEE H., QUIGLEY M.A., HERON P., ASKHAM J., BROCKLEHURST P. (2008), “Social and ethnic differences in attendance for antenatal care in England”, *Public Health*, 122(12): 1363-72.
- SAENZ R., HWANG S.S., AGUIRRE B.E. (1994), “In search of Asian war brides”, *Demography*, 31(3): 549-559.
- SHAFFER C.F. (2002), “Factors Influencing the Access to Prenatal Care by Hispanic Pregnant Women”, *Journal of the American Academy of Nurse Practitioners*, 14(2): 93-96.
- SOLÉ-AURÓ A., CRIMMINS E.M. (2008), “Health of Immigrants in European Countries”, *International Migration Review*, 42(4): 861-876.
- SOLÉ-AURÓ A., GUILLÉN M., CRIMMINS E.M. (2012), “Health care usage among immigrants and native-born elderly populations in eleven European countries: Results from SHARE”, *European Journal of Health Economics*, 13(6): 741-754.

- SOLÉ-AURÓ A., MONTSERRAT G., CRIMMINS E.M. (2009), "Health care utilization among immigrants and native-born populations in 11 European countries. Results from the Survey of Health, Ageing and Retirement in Europe", Research Institute of Applied Economics, Working Papers 20.
- SOSTA E., TOMASONI L.R., FRUSCA T., TRIGLIA M., PIRLA F., EL HAMAD I., CASTELLI F. (2008), "Preterm Delivery Risk in Migrants in Italy: An Observational Prospective Study", *Journal of Travel Medicine*, 15(4): 243-247.
- STRONKS K., RAVELLI A.C.J., REIJNEVELD S.A. (2001), "Immigrants in the Netherlands: Equal access for equal needs?" *Epidemiology & Community Health*, 55, 701-707.
- SWORD W. (2003), "Prenatal Care Use Among Women of Low Income: A Matter of 'Taking Care Of Self' ", *Qualitative Health Research*, 13(3): 319-332.
- SPINELLI A., GRANDOLFO M.E., DONATI S., ANDREOZZI S., LONGHI C., BUCCIARELLI M., BAGLIO G. (2002), "L'assistenza alla nascita dopo l'introduzione delle nuove normative", in AFFRONTI M. *et al.*, *Tertio Millennio Ineunte: migration, new scenarios for old problems*, Società Italiana di Medicina delle Migrazioni, Erice (Tp), 6-11.
- SPINELLI A., GRANDOLFO M.E., DONATI S., ANDREOZZI A., LONGHI C., BUCCIARELLI M., BAGLIO G. (2003), "Assistenza alla nascita tra le donne immigrate", in MORRONE A., SPINELLI A., GERACI S., TOMA L., ANDREOZZI S., *Immigrati e zingari: salute e disuguaglianze*, Rapporti ISTISAN03/4, ISSN 1123-3117, 11-23.
- STROZZA S. (2008), "La presenza straniera in Italia e Spagna: i volti nuovi delle città euromediterranee di recente immigrazione", in D'APONTE *et al.*, *Città Euro-mediterranee tra immigrazione, sviluppo, turismo*, Aracne editrice, Rome.
- TSIANAKAS V., LIAMPUTTONG P. (2002), "What women from an Islamic background in Australia say about care in pregnancy and prenatal testing", *Midwifery*, 18, 25-34.
- VILLAR for the WHO Antenatal Care Trial Research Group (2002), WHO antenatal care Randomised Trial: Manual for the Implementation of New Model, WHO - Department of Reproductive Health and Research, Genève.
- WHO (2009), Global Health Observatory (GHO), <http://www.who.int/gho/en/>.
- WOLFF H., EPINEY M., LOURENCO A.P., COSTANZA M.C., DELIEUTRAZ-MARCHAND J., ANDREOLI N., DUBUISSON J.B., GASPOZ J.M., IRION O. (2008), "Undocumented migrants lack access to pregnancy care and prevention", 8(93).

Appendix

Table A1 – *Women giving birth in Italy in 2003 by socio-demographic characteristics, citizenship, and residency status (percentage values)*

Socio-demographic characteristics	Citizenship			Total
	Italian	Foreign		
		With residency	Otherwise present	
<i>Age at childbirth:</i>				
< 24	9.6	27.7	41.2	11.7
25-29	26.4	33.3	33.8	27.1
30-34	38.4	24.7	16.8	36.9
35-39	21.6	11.7	7.0	20.5
40+	4.0	2.6	1.1	3.8
<i>Education:</i>				
High	14.9	10.9	8.3	14.5
Medium	43.5	34.5	31.5	42.5
Low	36.8	51.7	56.8	38.4
Missing	4.8	3.0	3.5	4.6
<i>Partner's citizenship:</i>				
Italian	93.6	25.3	15.1	86.1
Foreign	1.3	68.8	72.8	8.6
Single/missing	5.1	6.0	12.1	5.2
<i>Partner's education:</i>				
High	12.1	9.1	6.6	11.8
Medium	36.2	31.9	22.6	35.7
Low	40.2	47.9	44.7	41.0
Missing	11.5	11.1	26.1	11.6
<i>National origin:</i>				
Italy	100.0	-	-	89.2
Developed countries	-	5.9	6.2	0.6
Romania	-	11.0	27.1	1.3
Albania	-	12.4	9.7	1.3
Morocco	-	12.73	4.8	1.3
China	-	5.9	12.9	0.7
Other HMP countries	-	52.1	39.3	5.5
<i>Child's area of birth:</i>				
North west	27.3	40.4	41.1	28.7
North east	19.3	28.1	29.1	20.2
Centre	21.6	24.2	27.5	21.9
South	31.8	7.3	2.4	29.1
Total	100.0	100.0	100.0	100.0
Total (N)	395,070	43,932	3,771	442,773

Notes: Data for 2003 are missing for the regions of Molise and Calabria and for the autonomous province of Bolzano. HMP stands for "high migration pressure".

Source: our processing of CeDAP data 2003.