Better health, higher fertility?
Health status as a determinant of fertility intentions among migrants in Italy

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Introduction and background

Migrants' fertility has always been a prominent topic in demographic research, ever since demographers have studied migration flows. The interest for this topic was renewed recently, especially in the European context, probably for two reasons: the persistence of low fertility rates in many countries, and the massive increase of migratory flows towards Europe. On the one hand, 14 European countries reached (and some of them maintained) Total Fertility Rates (TFR) lower than 1.3 (Kohler et al. 2002); on the other hand, during the same years, the number of migrants in Europe increased by almost 50% (from 48million in 1990 to more than 70million in 2010 according to UN estimates). In this scenario, the contribution to the total fertility made by migrants became more and more important, but migrants' health has never entered the debate.

Literature review

There are many theories that explain fertility of migrants after migration (see Kulu 2005 for a review), and empirical evidence is abundant (but not for Italy). Studying migrants' fertility, researchers found that not all migrant subgroups display higher fertility rates than their native counterparts: there are significant differences according to the migration reason, the country of origin and the one of destination, the socio-economic status, the level of integration and the duration of stay in the destination country (e.g., Ekert-Jaffé et al. 2002; Andersson and Scott 2007; Ohlsson-Wijk 2015). To our knowledge, none of the existing theories include health in the reasoning about migrants' fertility, and existing studies have never tested if health status has an effect on migrants' fertility.

Even if it has never been considered among potential determinants of migrants' fertility, migrants' health is a major research topic in demography. Several studies found that migrants usually display better health conditions than natives (see Dominich et al. 2012 for a synthesis). The most relevant

theories explaining migrants' health advantage are the *healthy migrant effect* and the *salmon bias* hypothesis. According to the first one, migrants are a selected group of people with good health conditions, which makes them suitable for migrating. The salmon bias hypothesis suggests that we observe better health conditions among migrants because those who have health problems tend to go back to the origin country. Among the few comparative studies for Europe, Moullan and Jusot (2014) found that migrants show better health than natives in France, Belgium and Spain, while the opposite is true in Italy. Migrants' bad health in Italy might be due to either difficulties in the integration process or to low socio-economic conditions, which makes Italy an interesting case of study.

Migrants' health advantage does not only change according to the destination country, but also between genders. There are some studies showing that migrant women tend to declare worse health than men (Gerritsen and Devillé 2009; Cooper 2002; Read and Gorman 2006). In this context, these studies show that gender differences persist also within migrants. Such pattern can be explained by lifestyles, genetic and behavioral factors (Oksuzyan et al., 2009). Furthermore, migrant women seem less selected on health than men (especially when they migrate for family reunification), and they lose their health advantage at a faster rate than men (Antecol and Bedard 2006; Curran et al. 2006).

As regards the literature connecting health status and fertility, many studies found a significant relationship, especially among women (e.g., Nohr et al. 2004; Cvancarova et al. 2009). Women with health problem tend to desire (and to have) fewer children than healthy women (Chen et al. 2001; Madanat et al. 2008), and there might be several explanations for this. For example, health problems might cause infertility, curing a disease may be contraindicated during pregnancies, or women might be worried about the effects of pregnancy on their disease (Jancin 2004; Schover et al. 1999). However, there is no specific evidence on migrants.

Aim and hypotheses

In this work, we address the lack of knowledge on the relationship between migrants' health and childbearing, focusing on Italy, a country characterized by low fertility rates and increasing migration flows. In particular, we aim to understand if self-rated health status plays a role in shaping fertility

intentions of migrants, and to which extent this relationship changes between men and women. In this regard, we make two opposing hypotheses:

- *Hypothesis 1*: bad health decreases migrants' fertility intentions especially among women. Since women carry the burden of pregnancy, they need a good health status to endure the physical and psychological exhaustion of pregnancy; accordingly, health problems might affect their intentions to have a child more than their male counterparts.

- *Hypothesis 2*: only men's health is a prerequisite to be intended to have a child. In countries like Italy, family reunification is the main migration reason recently, and most of the times women join their partners. As a consequence, men are usually the main income providers, and their good health is a precondition to have a child, more than for women.

Data and methods

We study the relationship between migrant men' and women's health status and fertility intentions using the survey "Conditions and Social Integration of foreigners in Italy", released by the National Statistical Office in 2012. It is the most up-to-date survey on foreign-born individuals, and it includes information about country of birth, duration of stay, educational attainment, employment conditions, fertility intentions (intentions to have a child in the next three years), self-rated health status, functional limitations and chronical diseases.

Preliminary results displayed in this abstract were obtained through logistic regression models. In the final version of this paper, we will use more sophisticated techniques such as the bivariate ordered probit (*bioprobit,* Sajaia 2008). The bioprobit is used to estimate two correlated binary outcomes jointly (fertility intentions and self-rated health), allowing correlation among the two. This model suits our study case, because we include self-rated health among covariates and we want to see its cleaned effect on fertility intentions, while it is likely that the two variables, both focusing on subjective aspects of directly unmeasurable concepts, are correlated. Finally, we will test the relationship between health and fertility intentions looking at other indicators than self-rated health, i.e., functional limitations and chronical diseases, available in the survey.

Preliminary results

Preliminary analyses were performed using simple gender-specific logistic regressions on the probability of declaring positive intentions to have a(nother) child, to see the effect of self-rated health status (net of age, education and length of stay). For sake of simplicity, both fertility intentions and self-rated health were operationalized as dummy variables (fertility intentions: 0 = definitely not, probably not or probably yes; 1 = definitely yes; self-rated health: 0 = very good health; 1 = else). These very preliminary results show evidence in favor of our second hypothesis, since self-rated health status has a negative effect on men's fertility intentions, but not on women's (see Tab. 1). Compared to men who declare very good health, all the others have a lower probability of being definitely intentioned to have a(nother) child in the following three years, while no significant effect is detected among women.

Table 1 – Logistic regression on the probability of being definitely intentioned to have a(nother) child

	Men		Women	
Variable	Coefficient	pvalue	Coefficient	pvalue
Self-rated health *(ref. very good health)*	-0.171	0.039	0.085	0.259

A possible explanation for these results, as anticipated in the hypotheses session, is that all in all male health is a precondition for positive fertility intentions, likely because of the importance of men as main income providers. Conversely, even if the health selection on women is less strong then on men, female health condition, at a first glance, do not seem to be directly connected to their fertility intentions. A plausible motivation is the *interrelation hypothesis* (Mulder and Wagner 1993; Mussino and Strozza 2012), according which migrants display highest fertility rates right after the arrival, that is before any deterioration of women's health status might take place.

More specific and fine-tuned results will be available in the final version of this work.