Analyzing the gender gap in the medical specialties. Empirical evidence for the Spanish resident market.

Idaira Rodriguez Santana

PhD student in Economics. Centre for Health Economics, University of York.

Abstract

Despite the existence of a fairly balanced medical workforce in terms of gender, some specialties still show an overrepresentation of either male (i.e. surgical specialties) or female (i.e. general practice) doctors. This tendency remains unchanged for the newer cohorts of medical trainees. The gender differences may constitute a problem if they result from: some form of direct and/or statistical discrimination, differences in non-pecuniary benefits between specialties that may be discriminatory against woman (e.g. working schedules, working conditions…) or from differences in preferences between genders influenced by the existence of information phenomena such as emulation or role model effects.

In this paper we focus on disentangling the origin(s) of the gender gap. First, we study the role of informational role model effects (Manski, 1993; Chung, 2000) and social interactions in the specialty decision process. The role model phenomenon assumes that individuals obtain much of their information by observing the decisions made and the outcomes realized by others. Following Manski (1993), we develop a framework for evaluating the "effect" of close role models (i.e. medical trainees and medical students from previous cohorts) in the decision making process of current medical students. Using a non-parametric approach, from the family of matching estimators (Rosenbaum and Rubin 1983), we estimate the effect of female surgical role models (i.e. treatment effect) on the following cohorts of female doctors. We compute this effect by comparing the differences in the probability of choosing a surgical specialty of similar students (controlling for the demographic and academic covariates) but with a different degree of exposure to the treatment variable.

Additionally, differences in skills and performance between sexes might be another important determinant of the observed gap. We examine differences in performance between male and female medical students at the highly competitive MIR exam. Previous studies (Niederle and Versterlund, 2007, 2010; Ors, Palomino et al, 2008) have found that men tend to outperform women in highly competitive scenarios (e.g. one-shot entry exams like the Spanish MIR) while the opposite occurs in less stressing environments that measure long term effort (e.g. high school results, grade point average in the medical studies-*baremo*). We exploit an exogenous change in the ranking system that took place in 2010 and raised the weight of the MIR exam from 75% to 90% (and therefore lowered the weight of the *baremo* from 25% to 10%). We do this by computing the differences in the ranking between the pre and post 2010 weighting

system for several cohorts and we test whether the change has prejudiced female doctors.

We use data from the registry of residency positions chosen by medical school graduates in Spain (MIR data), from the years 2003 to 2015.The dataset contains demographic covariates, academic performance measures and an indicator for university attended. The latter will be used to link decision makers to students from different cohorts that are tagged as informational role models.

In terms of results, a positive significant effect of female role models in the residency decision making process would confirm the existence of role model information effects as one of the causes of the well-known gender gap in surgical specialties. Besides from a society perspective, it could be desirable to induce some female doctors to choose surgical specialties in order to provide useful information for future generations of doctors. Moreover, confirming that the change in the ranking system has jeopardized the access of female doctors to highly competitive specialties would have very important policy implications.

MAY, 2016