

# The gender pay gap among physicians in Italy: same job, different earnings

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# Strong feminization of the medical work force in all OECD countries but gender inequalities persist...

**Ranks and promotions:** Wright et al. 2003, Carnes et al. 2008

**Specialty fields:** Hinze 2000, Sasser 2005, Boulis and Jacobs 2010, Crompton and Lyonette 2011

**Pay:** Baker 1996, Hoff 2004, Sasser 2005, Weeks et al. 2009, Jagsi et al. 2012, Magnusson 2015.



# The research

**Aim:** Investigating the GPG among physicians

**Relevance:** Gap in the European literature

**Data:** More than a thousands physicians.

**Field:** Five hospitals in the Lombardy Region



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 **genders**  
Gender & Equality in Research and Science



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## II. Field and the data collection

- Online survey in 5 hospitals from June 2014 to July 2015
  - Policlinico (Public 1)
  - Legnano (Public 2)
  - Como (Public 3)
  - San Donato (Private 1)
  - Machado (Private 2)
- Important variety in sector, vocation, geography and size of hospitals
- 2205 physicians receiving the survey, 1074 answered – rate of response of 48.7%.

## III. The dataset

- **Demographic characteristics**  
Gender: 51.5% M vs 48.5% F  
Age: 48 (F) vs 52 (M) years old



# Human capital characteristics

	Men	Women	p value
Grade (points 90-110, mean)	107.12	108.01	0.0004
Honors (yes/no, %)	45.11	51.46	0.0468
Second specialty (yes/no, %)	26.22	16.12	0.0000
Months abroad (mean)	5.20	2.80	0.0004
Ready to move (yes/no, %)	59.49	45.11	0.0000
Portfolio (no. of hospitals, mean)	2.43	2.17	0.0045
Experience (years, mean)	21.62	17.00	0.0000
Seniority (years, mean)	16.44	14.17	0.0003

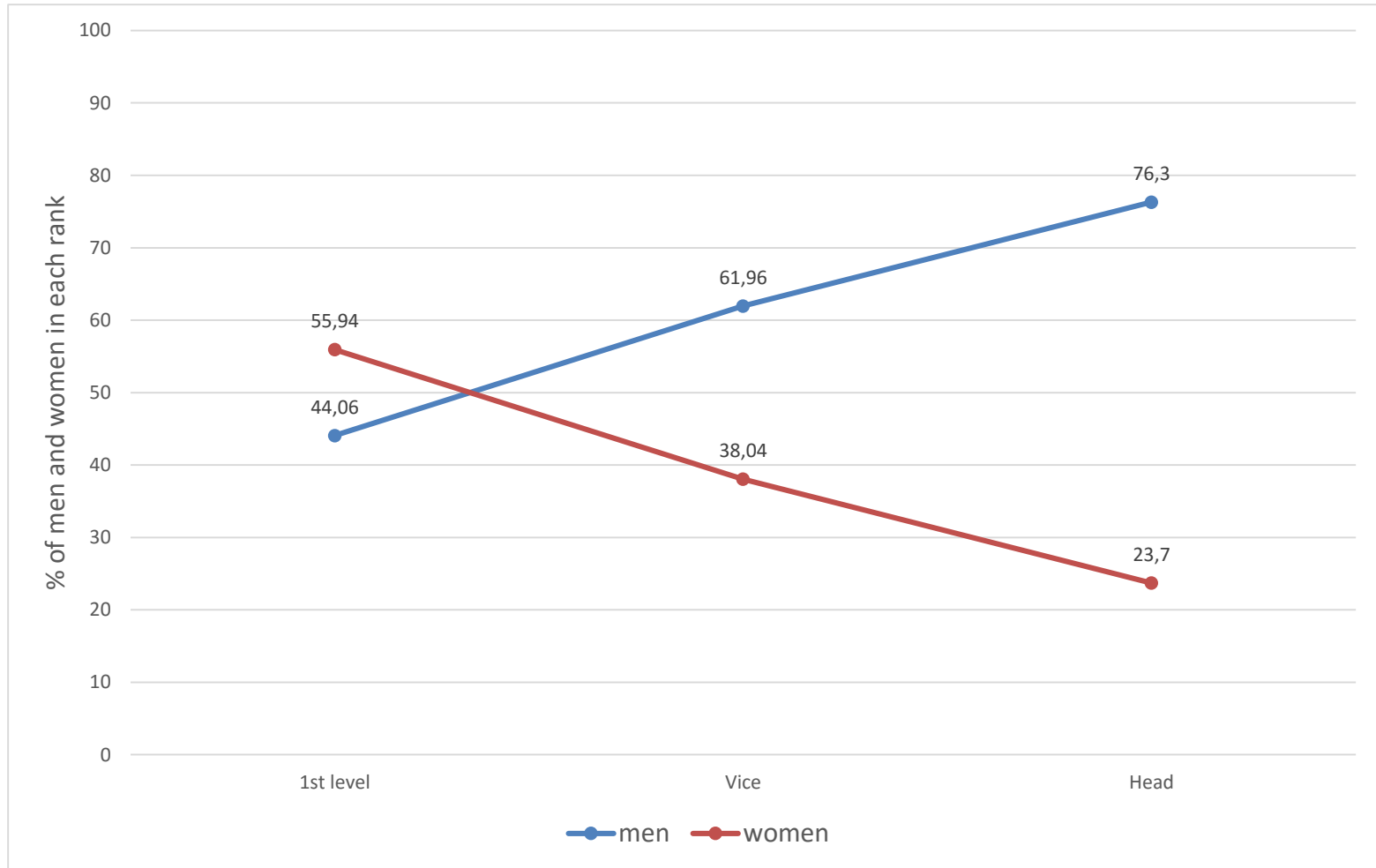


# Work characteristics

	Men	Women	p value
Contract (%)			
Short-term/ collaborations	6.52	13.13	0.001
Free-lance	15.04	12.74	
Open-ended	78.44	74.13	
Specialty (%)			
Medicine	39.86	56.48	0.0000
Surgery	35.14	16.05	
Diagnostic	21.20	23.98	
Public Health	3.08	2.51	
All others	0.72	0.97	
Rank (%)			
1 <sup>st</sup> level	50.63	70.25	0.000
Vice	28.57	18.62	
Head	18.81	6.14	
All others	1.99	4.99	
Weekly work hours (mean)	47.78	44.97	0.0000
Weekly hours of private practice (mean)	3.74	2.04	0.0000
Income	85973.03	62747.42	0.0000



# The scissor diagram



# Family characteristics

	Men	Women	p value
Married (yes/no, %)	70.52	57.97	0.0000
Living together (yes/no, %)	15.91	15.74	0.9378
Married or living together (yes/no, %)	86.44	73.70	0.0000
Divorced or separated (yes/no, %)	16.46	13.24	0.1388
Number of children (mean)	1.5	1.06	0.0000
No children (yes/no, %)	23.87	38.96	0.0000
Having a partner physician (yes/no, %)	25.50	24.57	0.7257
Having a father physician (yes/no, %)	12.30	8.25	0.0288
Partner's weekly hours of work (%)			
0 hours	23.85	08.59	 0.0000
1-20	11.72	02.86	
21-30	14.02	04.95	
31-40	32.22	33.85	
More than 40	18.20	49.74	
Weekly hours of nonpaid work (mean)	15.5	25.5	0.0000

# 1. OLS model

$$\log(\text{income}) = \sum \beta X + \varepsilon$$

First set of hypotheses:

1. Women earn less because of their lower (average) work experience, that is: gender inequalities are only «a matter of time».
2. Women earn less because they work fewer hours
3. Women earn less because they do less private practice than men
4. Women earn less because they are clustered in medical specialties which are less remunerative
5. There is a pure gender effect on income: given equal characteristics, women earn less (direct discrimination)



	(1) Log income	(2) Log income	(3) Log income	(4) Log income
Female	-0.305***	-0.232***	-0.149***	-0.150***
Hospital: Public 1		0	0	0
Hospital: Public 2		-0.0423	-0.0196	-0.0285
Hospital: Public 3		-0.00575	0.0169	0.0109
Hospital: Private 1		0.180***	0.0913**	0.0948**
Hospital: Private 2		0.234***	0.176***	0.173***
Grade: up to 104		0	0	0
Grade: 105-110		0.0408	0.0314	0.0392
Grade: honors		0.0542	0.0451	0.0501*
Experience		0.0191***	0.0122***	0.0122***
Work hours			0.00477***	0.00491***
Hours of private practice			0.00881***	0.00842***
Rank: Up to 1st level			0	0
Rank: Vice			0.193***	0.184***
Rank: Head			0.434***	0.440***
Specialty: Medicine			0	0
Specialty: Surgery			0.0741***	0.0806***
Specialty: Diagnostic			0.149***	0.149***
Specialty: All others			0.0636	0.0570
No partner				0
No working partner				0.0365
Partner working residually				-0.0172
Partner working part-time				0.0791*
Partner working full-time				0.0353
Partner working over-time				0.0786**
No children				0
One child				0.0434
Two children				0.0567**
More than two children				0.0429
Having a physician as partner				-0.0447
Constant	11.27***	10.81***	10.51***	10.45***
R-square	0.123	0.362	0.484	0.494
N	1004	914	914	914

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , \*\*\*\*  $p < 0.001$



## OLS model – results

Analyzing the variable gender

Gross gender pay gap: 30%.  
Net gender pay gap (controlling for all characteristics): 15%.



Results suggest that there is a pure gender effect on income (H5).

Analyzing all other variables

Factors increasing income: honors (90%), work hours, private practice, experience, private hospitals, top positions, surgery and diagnostic.



Results suggest that womens' reduced work experience (H1), the fact that they work fewer hours (H2) and they do less private practice (H3), as well as their concentration in medical specialties (H4) contribute to produce the gap.



## 2. Ols model on income with interactions

Second set of hypothesis:

1. Women earn less because of their greater family responsibilities:
  - 1.a. Being married positively affects men's pay while it negatively affects women's pay.
  - 1.b. Having children positively affects men's pay while it negatively affects women's pay.
2. Women earn less because of discriminational mechanisms:
  - 2.b. Educational credentials have a greater effect on income for men than for women
  - 2.c. Working in surgery have a greater effect on income for men than for women, keeping all other characteristics equal.



## Ols model with interactions - results

Family responsibilities (Hs 1).  
They do differently «impact» on women's and men's pay **but**:

- Having a partner: positive effect for men, null effect for women (-).
- Having children: positive effect for men, null effect for women (-).



The «marital wage premium for men» and the fatherhood premium are stronger than the marital wage penalty for women and the penalty for motherhood !

Family responsibilities - accounting for the # of working hours of the partner and the # of children:

- Having a working partner: + effect for men, null effect for women.
- The effect of children is significant with the third child (+ for men, - for women at 90% level).



Results (apparently?) contradict previous findings on the positive effect of non working wives.

Discriminational mechanisms (Hs 2).

Honors, working in private hospitals, working in surgery or diagnostic, the hours of private practice, being vice or head positively affect men's pay, but not women. Negative effect of working in private 1 for women.



Results suggest that the same characteristics have different «rewards» thus calling for (direct) discrimination as explanation for the pay gap.



# Conclusions

## Descriptives:

- Women clustered in lower-levels and medical specialty (few of them in surgery); less likely to work in private practice, 39% no children: the sexual division of work still strongly unbalanced.

## Models:

- Women earn 15% less controlling for differences in observable characteristics
- The same human capital and work characteristics may have different «rewards» whether they refer to women or men, thus suggesting that direct discrimination is taking place.
- Fatherhood and marital premium for men stronger than motherhood and marital penalty for women.



Thank you!

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## Annex 1 – Ols model with interactions

	(1) Log income	(2) Log income
Female	-0.141****	0.0843
Hospital: Public 1	0	0
Hospital: Public 2	-0.0294	0.0382
Hospital: Public 3	0.00273	0.0445
Hospital: Private 1	0.0879**	0.201****
Hospital: Private 2	0.170****	0.238****
Hospital*female: Public 1		0
Hospital*female: Public 2		-0.115**
Hospital*female: Public 3		-0.0585
Hospital*female: Private 1		-0.232***
Hospital*female: Private 2		-0.102
Grade: up to 104	0	0
Grade: 105-110	0.0340	0.0437
Grade: honors	0.0475	0.0937**
Grade*female: up to 104		0
Grade*female: 105-110		-0.0276
Grade*female: honors		-0.0935
Experience	0.0120****	0.0117****
Work hours	0.00504****	0.00476****
Hours of private practice	0.00879****	0.00932***
Hours of private practice*female		-0.00283
Rank: Up to 1st level	0	0
Rank: Vice	0.183****	0.145****
Rank: Head	0.437****	0.398****
Rank*female: Up to 1st level		0
Rank*female: Vice		0.0823
Rank*female: Head		0.159**
Specialty: Medicine	0	0
Specialty: Surgery	0.0754***	0.0991***
Specialty: Diagnostic	0.145****	0.145****
Specialty: All others	0.0601	0.199**
Specialty*female: Medicine		0
Specialty*female: Surgery		-0.0295
Specialty*female: Diagnostic		-0.00548
Specialty*female: All others		-0.292**
Partner dummy	0.0511	0.109**
Partner dummy*female		-0.0795
Children dummy	0.0501**	0.0659**
Children dummy*female		-0.0383
Having a physician as partner	-0.0401	-0.0493*
Having a physician as partner*female		
Constant	10.44****	10.33****
R-square	0.491	0.505
N	914	914

p-values in parentheses

\* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01, \*\*\*\* p < 0.001

	(3)	(4)
No partner	0	0
No working partner	0.0365	0.0698
Partner working residually	-0.0172	0.0774
Partner working part-time	0.0791*	0.164***
Partner working full-time	0.0353	0.0980*
Partner working over-time	0.0786**	0.155***
No partner*female		0
No working partner*female		-0.0315
Partner working residually*female		-0.274**
Partner working part-time*female		-0.202*
Partner working full-time*female		-0.0807
Partner working overtime*female		-0.0945
No children	0	0
One child	0.0434	0.0561
Two children	0.0567**	0.0691*
More than two children	0.0429	0.117**
No children*female		0
One child*female		-0.0313
Two children*female		-0.0365
More than two children*female		-0.157*
Constant	10.45****	10.33****
R-square	0.494	0.514
N	914	914



## Annex 2 - Population, email list, respondents

	Medical Population	Original email list	Corrected email list	Real email list	Respondents	Rate of response
Policlinico	902	594	589	565	247	43.6%
Legnano	721	759	721	711	403	56.7%
Como	524	533	524	498	239	48%
San Donato	302	403	302	288	113	39.2%
Machado	587	147	146	143	72	50.4%
		2436	2282	2205	1074	48.7%

