Determinants of women's preferences for surgical versus conservative management for pelvic organ prolapse: a survey-based study from Italy

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SUPPLEMENTARY MATERIAL

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Table S1. The Qualtrics questionnaire

Invitation message

Dear Madam, we kindly ask for 5 minutes of your time to answer a short questionnaire. Your response will be used for a study conducted by the Scuola Superiore Sant'Anna in Pisa whose object is a hypothetical clinical scenario on pelvic organ prolapse. The data collected are handled anonymously. We warmly thank you for your time. Click here to participate in the study: [link]

Page 1: Introduction

This survey targets women over the age of 18.

Geographical variation in medical practice is a widely debated issue: why are two people living in different locations differently likely to be treated for the same medical problem?

In the scientific community, variation in responses to the same health problem is considered a negative element because it can lead to inequalities in treatment, but it can be considered a positive element when such variation depends on the individual's treatment preferences.

In the following questionnaire, you will be given a hypothetical scenario about one of the most common problems in women, pelvic prolapse, and asked to express your potential preferences with respect to two treatment response options to this health problem. Filling it out takes very few minutes. Participation in the study is completely voluntary. Data are treated completely anonymously. Should you not wish to answer one or more questions, you may skip them without any problem. You may leave the survey whenever you wish.

To participate in the study, please continue by clicking on the arrow at the bottom right. By clicking, you provide consent to participate in the study, to be potentially recontacted for further questions, and to the processing of the data provided (which is totally anonymous).

Page 2: Clinical scenario

Please read the following scenario carefully. Please focus on the clinical description and treatment options.

Imagine you are 60 years old and going through menopause.
You begin to have symptoms such as frequent urine leakage, pain and discomfort during intimate moments, a sense of heaviness in the lower abdomen, and when you cough you have a feeling that something is coming out of the vagina. Following a gynecological examination, you are informed that your symptoms correspond to a grade 3 prolapse (the highest grade is 4). With grade 3 prolapse, the uterus protrudes out of the vagina.

Pelvic prolapse results from a collapse of the pelvic floor, which is the anatomical structure supporting all the pelvic organs above the vagina. When the pelvic floor collapses, some organs (uterus, bladder) can bulge out through the vagina, causing the symptoms from which you suffer. There are two treatment options for this condition:

Option 1) *Surgical treatment.*
In this case you will undergo surgery, which can be done transvaginally or abdominally through different techniques. The operation allows the symptoms to be resolved through a correction of the pelvic floor collapse that led to the prolapse. However, it is a surgical procedure that requires some days of hospitalization and can lead to postoperative complications in up to 10% of cases. In addition, removal of the uterus is required in an average of 60% of cases.

Option 2) *NON-surgical treatment*.
In this case, the suggested treatment is the use of a device (the pessary) that, inserted into the vagina, allows the prolapsed organs to be supported. Pelvic floor gymnastics to strengthen the pelvic muscles, physical therapy, medications, and hyaluronic acid infiltrations may also be used. Symptoms will be relieved, in many cases (90%) resolved, though the anatomical defect will not be corrected. According to current estimates, 1 in 3 women will still have surgery within 10 years.

Pages 3-4: Factors

1) How likely from 1 to 99 would you choose to have surgery? [reference]

2) How likely from 1 to 99 would you choose to have surgery if the intervention was explicitly recommended by your gynecologist?

3) How likely from 1 to 99 would you choose to have surgery if the intervention was explicitly recommended by your General Practitioner?

4) How likely from 1 to 99 would you choose to have surgery if the intervention was explicitly recommended by two physicians?

5) How likely from 1 to 99 would you choose to have surgery if you knew that your trusted gynecologist would follow you through surgery and hospitalization?

6) How likely from 1 to 99 would you choose to have surgery if a close friend or relative, who has had the same operation, advised you to have surgery?

7) How likely from 1 to 99 would you choose to have surgery if you knew that the estimated postoperative recovery time is about one month?

8) How likely from 1 to 99 would you choose to have surgery if you knew that the specific operation you would undergo would be the surgical technique that has the lowest possible complication rate?

9) How likely from 1 to 99 would you choose to have surgery if you knew for sure that removal of the uterus would not be required?

10) How likely from 1 to 99 would you choose to have surgery if you knew for sure that you would have no scars on your abdomen after the operation?

11) How likely from 1 to 99 would you choose to have surgery if you knew that the referral hospital for this type of operation is a maximum of a 20-minute drive from where you live?

[The first question only was randomized and was presented separately on a single webpage. Instead, the following ten non-randomized questions were presented on a different page]

Page 5: Sociodemographic data

Please provide us with some information about yourself, which will be treated totally anonymously. Thank you.

How old are you? [numeric response from 18 to 99]

What is you education level? [3 options]

What is you work condition? [4 options]

How many children do you have? [3 options]

How often do you perform physical activity? [3 options]

Do you have a partner? [2 options]

How would you define the support your family could give you in case of need? [3 options]

How is your perceived health status? [numeric response from 1 to 5]

Do you suffer from any chronic diseases (high blood pressure, diabetes, heart problems, neurological problems, tumors, etc.)? [3 options]

Had you ever heard of urinary incontinence? [3 options]

Had you ever heard of pelvic organ prolapse? [3 options]

Page 6: Control question

"Would you use epidural analgesia during childbirth?" [Yes/No]

Thank you for completing the survey.

Table S2. All imputed missing data

Variable	Missing data	
	N.	(% of the total)
Age	62	(27.9%)
Perceived health status	13	(5.9%)
Education level	13	(5.9%)
Work condition	14	(6.3%)
Children	13	(5.9%)
Physical activity	14	(6.3%)
Civil status	14	(6.3%)
Assumed family support	13	(5.9%)
Chronic diseases	13	(5.9%)
Urinary incontinence	13	(5.9%)
Pelvic organ prolapse	13	(5.9%)

These variables were imputed through chained equation multiple imputation so as to have no missing value during the logistic regression analyses and thus perform these analyses on the entire study population (n=222)

Table S3. Region of residence of our respondents (n=222)

Region	**Area**	**N**	**%**
Apulia	South	8	4.0
Campania		5	2.5
Latium	Center	9	4.5
Tuscany		39	19.4
Emilia-Romagna		10	5.0
Liguria	North	56	27.9
Lombardy		49	24.4
Piedmont		5	2.5
Veneto		9	4.5
Others		11	5.5
Missing		21	

We obtained 201 observations with 21 missing (9.5%). Regions with < 5 observations were categorized as “Others”.

Table S4. Unadjusted and adjusted beta regression models (n=222)

Chance of choosing surgery	Unadjusted model			Adjusted model		
	Coeff.	SE	p-value	Coeff.	SE	p-value
No factor	Ref.			Ref.		
Gynaecologist's advice	1.14	0.37	0.002	1.07	0.36	0.003
GP's advice	0.85	0.36	0.017	0.81	0.36	0.027
Two physicians' advice	1.11	0.37	0.002	1.03	0.38	0.006
Trusted physician's presence	0.97	0.36	0.006	1.07	0.36	0.003
Friends/relatives' advice	0.31	0.34	0.358	0.22	0.34	0.531
Short postsurgical recovery	0.68	0.34	0.047	0.53	0.35	0.132
Low complication rates	1.24	0.34	0.000	1.20	0.35	0.001
Uterine sparing surgery	1.08	0.34	0.002	1.14	0.35	0.001
No abdominal scars	0.99	0.37	0.007	1.04	0.38	0.006
Nearby hospital	1.06	0.37	0.004	0.99	0.38	0.009
Age				0.00	0.01	0.939
Perceived health status				0.16	0.13	0.207
Elementary/middle school				Ref.		
High school				-0.74	0.44	0.094
University				-0.87	0.45	0.055
Employed				Ref.		
Unemployed				0.26	0.28	0.350
Student				0.59	0.44	0.183
Health worker				0.15	0.20	0.456
No children				Ref.		
Just one				0.19	0.21	0.375
Two or more				-0.13	0.24	0.600
No physical activity				Ref.		
Sometimes				0.18	0.24	0.452
Often				0.13	0.25	0.615
With partner				Ref.		
Without partner				0.13	0.22	0.546
Excellent family support				Ref.		
Good				-0.55	0.19	0.004
Poor				0.30	0.30	0.310
No comorbidities				Ref.		
Just one				0.45	0.20	0.028
Two or more				-0.25	0.40	0.532
Never heard about UI				Ref.		
Heard about UI				0.40	0.52	0.439
UI affected				-0.26	0.61	0.666
Never heard about POP				Ref.		
Heard about POP				-0.10	0.29	0.728
POP affected				-0.31	0.50	0.529

Figure S1. Boxplot for the outcome variable "chance of choosing surgery" expressed as a percentage according to the first randomized factors.

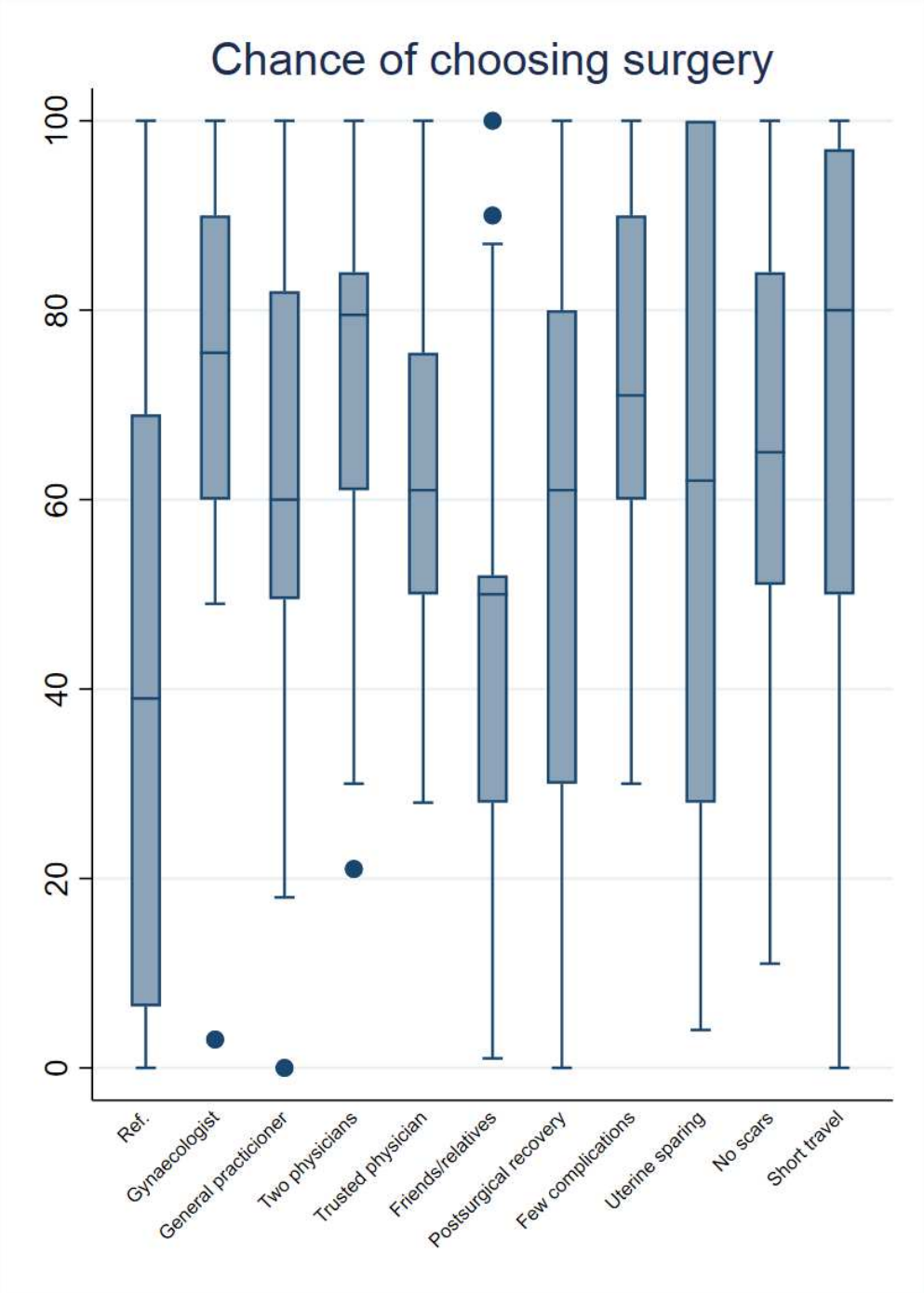


Figure S2. Unadjusted beta regression model for the primary outcome. The coefficients of the model are expressed in exponential form as Odds Ratios (and 95% confidence interval). Please, see Table S3 for non-exponential coefficients.

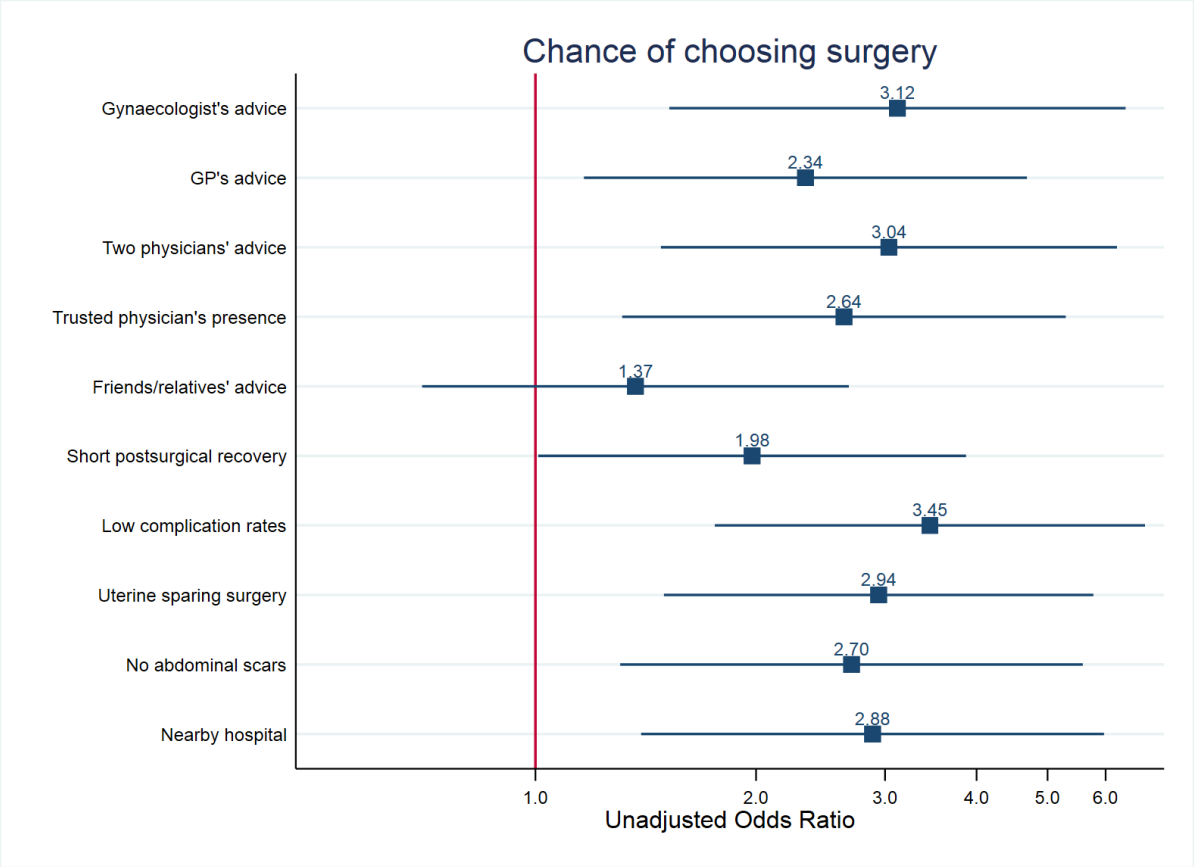
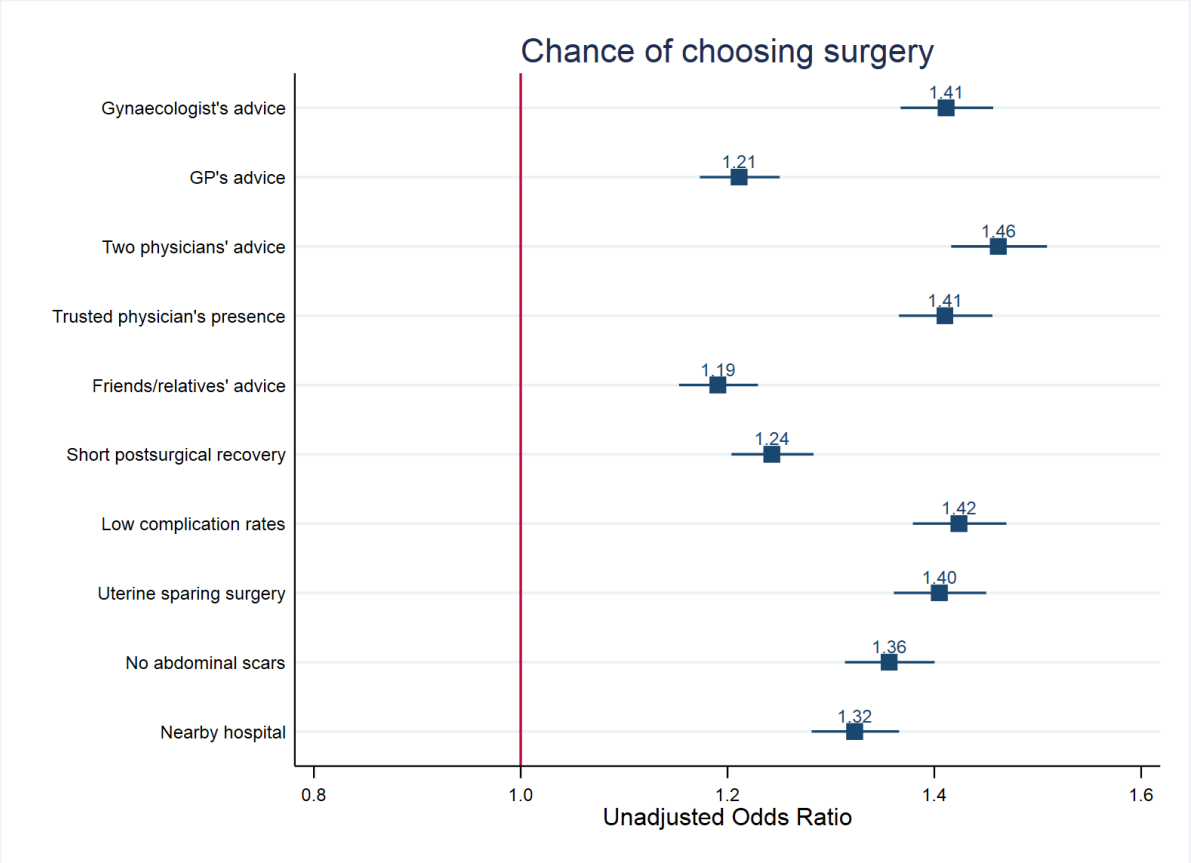


Figure S3. Multilevel model for repeated measures. The coefficients of the model are expressed in exponential form as Odds Ratios (and 95% confidence interval).



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