

# Perspectives of Italian pregnant women on pregnancy examinations and pregnancy care: is the caregiver more important than the care?

Ugo Indraccolo<sup>1</sup>, Simona Cona<sup>2</sup>, Alexandra Nistor<sup>2</sup>, Salvatore Renato Indraccolo<sup>2</sup>, Romolo Di Iorio<sup>3</sup>, Piergioorgio Fedeli<sup>4</sup>, Carlo De Angelis<sup>2,5</sup>

<sup>1</sup>Maternal-Infantile Department, Complex Operative Unit of Obstetrics and Gynecology, “Alto Tevere” Hospital of Città di Castello – ASL 1 Umbria; <sup>2</sup>Department of Gynecological, Obstetrical, and Urological Sciences, “Sapienza” University of Rome; <sup>3</sup>Department of Medical and Surgical Sciences and Translational Medicine, “Sapienza” University of Rome; <sup>4</sup>School of Law, Legal medicine, University of Camerino, Italy; <sup>5</sup>Operative Unit of Obstetrics, Fabia Mater Clinic of Rome.

**Abstract.** *Aim:* Assessing awareness of Italian low-risk pregnant patients on low-risk pregnancy care and what do they feel about their own pregnancy. *Methods:* A questionnaire was administered to 382 low-risk pregnant women. This questionnaire assessed general knowledge of low-risk pregnancy, low-risk pregnancy care, and how much patients rated ten topics of low-risk pregnancy care. It would be expected that the knowledge of each topic would associate with the patient’s perceived importance of that topic. *Results:* Poor knowledge of pregnancy care was proven. Patients seem to incorrectly overrate vaginal examinations and obstetric and gynecologist-led care, while they attribute appropriate importance to midwife-led care. The more examinations performed (vaginal examinations, sonographic checks, cardiotocographies), the higher their rating. *Conclusions:* In Italy, expectations of pregnant women about their own pregnancy are incorrectly trusted in the obstetrics and gynecologists. Both poor knowledge of pregnancy care and cultural perspectives on the birth process amongst Italian people explain the finding. Referring low-risk pregnant women to midwives would help them to rate more the care than the caregiver. ([www.actabiomedica.it](http://www.actabiomedica.it))

**Key words:** low-risk pregnancy, midwives-led care, obstetrics and gynecologist-led care, liability, knowledge, Italy.

## Introduction

A 2010 study carried out in a large Italian hospital facility reported that medical intervention during labor and delivery seemed excessive, even in low-risk pregnancies (1). In that study, the authors postulated that the hospital’s policy to medicalize low-risk pregnancies likely caused the unnecessary rise in Cesarean sections. Evidence suggests that midwife-led pregnancy care results in fewer unnecessary medical interventions in Italy (2). This is also what the World Health Organization has suggested (3). However, there is little published clinical evidence from Italy regarding midwife-led pregnancy care. For example, a

search of “midwife led care” and “Italy” on the PubMed search engine (the 9 of January 2021) resulted in only 17 publications. Of the 17 publications, only seven were published from Italy (2, 4-9). Three of the publications assessed birth outcome of the midwife-led natal care (5,7) but none reported data on midwife-led pregnancy care. This finding may be explained by poor awareness or acceptance by Italian people of the management role of midwives in pregnancy and birth.

Italian health workers can be held criminally liable in the event of a bad pregnancy outcome (see for example 10-12). Therefore, Italian midwives may be hesitant to provide pregnancy care out of fear of litigation and behaviors of defensive medicine (13,14).

The midwives' hesitancy may strengthen the perception amongst Italian people that pregnancy care must be provided by obstetrics and gynecologists.

Other factors that can influence the use of midwife-led pregnancy care include different policies and criticality in Italian hospitals (15,16), regional and local perspectives of patients and other stakeholders about the birth process (17-19), threats of litigation and violence by some patients to health workers (17-20), and flaws in counseling (21,22). Together, all of these factors contribute to the heterogeneous feelings of Italian people about pregnancy and birth.

It is thus perhaps not surprising that Italian pregnant women are at least confused about their pregnancy care options and make decisions for their pregnancy care based on their cultural perceptions, instead of based on appropriate information.

## Aim

The aim of this study is to assess how aware low-risk Italian pregnant women are of the pregnancy care options available to them and their perception about their own pregnancy management experience.

## Methods

### *Study design*

A questionnaire was developed targeting low-risk pregnant women. In the first section of the questionnaire, patients were asked to provide general information about their age, occupation, education, parity, nationality, marital status, zone of Italy where they came from (North, Center, South or Islands), and type of care (specifically: public care, private care, both public and private). In the second section, patients were assessed on their general knowledge of ten topics regarding pregnancy and pregnancy care. The ten topics investigated were: vaginal examinations, sonographic checks, blood lab analyses, cardiotocography, midwife-led care, obstetrics and gynecologist-led care, vitamins and iron supplementation in the third trimester, delivery courses, food cooking and feeding care, and

physical activity during pregnancy (Table 1, questions 7 to 29). The patients were then asked to rate their perceived importance of the topics using a 5-point Likert scale, from 1 (lowest importance) to 5 (highest importance). The third section of the questionnaire (Table 1, questions 30 to 39) assessed the patients' knowledge of each of the ten topics reported above, using information from the Italian guidelines for low-risk pregnancy care available at the time of questionnaire (23-25) or evidence-based literature (26-30). We expected that the knowledge of each item would associate with the patient's perceived importance of that item.

### *Sample*

Patients were prospectively enrolled at the Fabia Mater Clinic of Rome ([www.fabiamater.it](http://www.fabiamater.it)) between February 2018 and September 2018. Women between 37 and 42 weeks of pregnancy were screened for obstetric risk and patients with high risk pregnancies (pregnancy complications and/or pre-gestational diseases) were excluded from the interview. After screening, a printed questionnaire was administered to the selected low-risk patients. From June 2019 to October 2019, more patients were added to the study by diffusing an online version of the questionnaire. The questionnaire was shared on social networks and pregnancy blogs. The online version of the questionnaire screened for obstetric-risk and only enrolled low-risk patients between 37 and 42 weeks if pregnancy, for consistency with the 2018 sample. The three sections of the questionnaire used for the study were the same regardless of whether the patient joined in 2018 or online in 2019.

### *Statistical analysis*

The relationship between patients' knowledge of the ten pregnancy care topics and their perceived importance of each topic was determined by performing odds ratio calculations with the Likert score attributed to each topic. A Likert rating of 4 or 5 points was categorized as a high Likert score, whereas a Likert rating of 1, 2, or 3 points was categorized as a low Likert score.

As an additional analysis, odds ratios between Likert score (high Likert score or low Likert score)

**Table 1.** Questions administered and rates of answers.

<b>Second section*</b>		
Question 1	Was your pregnancy spontaneous?	Yes: 94.5%
Question 2	Do you know if your pregnancy is a low-risk one?	Yes: 84.3%
Question 3	On which of the following issues concerning pregnancy do you think to be more informed?	Hygiene and nutrition: 28.8% Fetal growth and development: 18.8% Physiology and body changes: 52.4%
Question 4	Which of these pregnancy issues did you have more doubts about?	Hygiene and nutrition: 15.4% Fetal growth and development: 53.1% Physiology and body changes: 31.4%
Question 5	Which source of information on pregnancy have you used?	Internet: 78.5% Paper/journals/books: 27.3%
Question 6	How much previous experiences on pregnancy of parents and friends have influenced your feelings on your pregnancy?	Noting: 27.7% Little: 26.7% Highly: 54.5%
Question 7	How many vaginal examinations have you received?	Three or less: 35.3% More than 3: 64.6%
Question 8	How much do you rate useful vaginal examinations for pregnancy outcome?	Low (1-3): 40.8% High (4-5): 59.2%
Question 9	How many sonographic examinations have you received?	Three or less: 14.4% More than 3: 85.6%
Question 10	How much do you rate useful performing these sonographic examinations for pregnancy outcome?	Low (1-3): 40.8% High (4-5): 59.2%
Question 11	How many times did you undergo blood sample analyses?	Less than 9: 46.6% Nine or more: 53.4%
Question 12	How much do you rate useful performing blood samples analyses for pregnancy outcome?	Low (1-3): 24.3% High (4-5): 75.7%
Question 13	How many times did you undergo microbiological swabs in pregnancy?	One time: 79.3% Two or more times: 20.7%
Question 14	How much do you rate useful performing microbiological swabs for pregnancy outcome?	Low (1-3): 38.7% High (4-5): 61.3%
Question 15	How many cardiotocographic checks do you think will you be undergone?	One: 29.6% More than 1: 60.4%
Question 16	How much do you rate useful performing cardiotocographic check for pregnancy outcome?	Low (1-3): 30.9% High (4-5): 69.9%
Question 17	Did a midwife provide care during your pregnancy?	Yes: 62.3% No: 37.7%
Question 18	How much do you rate useful for pregnancy outcome the midwife-provided care during your pregnancy?	Low (1-3): 41.9% High (4-5): 56.8% Missing: 1.3%
Question 19	Did an obstetrics and gynecologist provide care during your pregnancy?	Yes: 91.4% No: 8.6%
Question 20	How much do you rate useful for pregnancy outcome that an obstetrics and gynecologist has cared your pregnancy?	Low (1-3): 16.2% High (4-5): 81.7% Missing: 2.1%

Question 21	Did you take multivitamins and iron in the III trimester of pregnancy?	Yes: 66.2% No: 33.8%
Question 22	How much do you rate useful vitamins and iron supplementation in the III trimester for pregnancy outcome?	Low (1-3): 44.0% High (4-5): 56.0% Missing: 0.5%
Question 23	Did you follow a delivery course?	Yes: 69.6% No: 39.4%
Question 24	How much do you rate useful the following delivery course for delivery outcome?	Low (1-3): 37.4% High (4-5): 40.8% Missing: 3.4%
Question 25	Did you pay attention to cooking and feeding during pregnancy?	Yes: 94.0% No: 6.0%
Question 26	How much do you rate useful paying attention to cooking and feeding on the pregnancy outcome?	Low (1-3): 79.3% High (4-5): 20.7%
Question 27	Did you do exercise during pregnancy?	Yes: 36.6% No: 63.6%
Question 29	How much do you rate useful performing physical activity for pregnancy outcome?	Low (1-3): 40.6% High (4-5): 46.9% Missing: 6.3%
<b>Third section</b>		
Question 30	Do you know that vaginal examinations number does not improve pregnancy outcome?	Yes: 47.6% No: 52.4%
Question 31	Do you know that, without indication, the III trimester sonographic check is not recommended?	Yes: 21.5% No: 78.5%
Question 32	Do you feel that you always know the aim of the blood samples analyses you underwent?	Yes: 81.7% No: 18.3%
Question 33	Do you know that, in a low-risk pregnancy, cardiotocographic checks are not recommended?	Yes: 14.1% No: 85.9%
Question 34	Do you know that midwife-based care associates to better pregnancy outcomes and to a higher rate of breastfeeding?	Yes: 55.5% No: 44.5%
Question 35	Do you know that a low risk pregnant should be addressed to be cared for by midwives after her first visit?	Yes: 31.9% No: 68.1%
Question 36	Do you know that, without indication, routine vitamins and iron supplementation in the III trimester is not recommended?	Yes: 44.5% No: 55.5%
Question 37	Do you know that to have followed delivery courses reduces the Cesarean section rate?	Yes: 40.1% No: 59.9%
Question 38	Do you know that paying attention to feeding and cooking were able to prevent some infectious diseases in pregnancy?	Yes: 66.9% No: 33.1%
Question 39	Do you know that moderate exercise does not result in worse pregnancy outcome?	Yes: 68.6% No: 31.4%

\*Questions of the first section were not reported (unnecessary).

and -number of vaginal examination performed, number of sonographic checks, -number of blood lab analyses, number of cardiotocographies, -midwife-led care, -obstetrics and gynecologist-led care, -vitamins and iron supplementation in the third trimester, -delivery courses, -food cooking and feeding care, -physical activity were calculated. The analysis assessed the then main topics from a quantitative view, aiming to determine if patients who received more examinations during their pregnancy or who followed specific items overrated the importance of the examinations or of items in pregnancy care.

Statistical analyses were performed using Libre Office 6.4 Calc (for descriptive calculations) and IBM SPSS statistics 27 (for odds ratio calculation, with inference).

### *Ethics*

The Ethical Committee of the *Fabia Mater* Clinic authorized this study. Patients were informed that the data would be used for scientific investigation in aggregate format, according to current Italian law, and provided their permission.

### **Results**

A sample of 404 pregnant women was surveyed in this study. Twenty-one patients were excluded because they were not at term, while one more patient was excluded as she disclosed she took heparin during pregnancy after the interview. Therefore, 382 low-risk pregnant patients constituted the sample for this study. The mean age of patients was 31.2 years ( $\pm$  5.37 ages, limits 18–48). Two-hundred-twenty-eight (59.7%) women were married, and 348 were Italians (91.1%). Eight patients (2.1%) came from other countries, 148 (38.7%) came from the North of Italy, 126 (33.0%) came from the Center of Italy, and 100 (26.2%) came from the South of Italy. Two-hundred-eighty-eight women (75.4%) were employed, and 150 (39.3%) were multiparas. One-hundred-forty-three women (37.4%) received private care, 75 (19.6%) received public care, and 164 (42.9%) both public and private care.

Table 1 reports the results of the answers to the second and third section of the questionnaire. Table 2 reports the odds ratio values (and 95% CI) among number of examinations performed and perception of the importance attributed to examinations.

Table 3 reports the odds ratio values (and 95% CI) for patients' knowledge of the topics and their importance rating. We found that two of the ten topics did not have a knowledge level that seemed to coordinate with the patient's perceived importance of that topic: vaginal examinations and obstetrics and gynecologist-led care (Table 3). The last column of Table 3 reports the interpretation of odds ratios for understanding.

### **Discussion**

This study assesses Italian pregnant women awareness of low-risk pregnancy care. Results suggest that Italian women generally have poor knowledge about low-risk pregnancy care and overrate the role of obstetrics and gynecologists in managing their pregnancy (Table 3).

The importance of vaginal examinations was also overrated by the surveyed patients. We suggest that overrating the importance of vaginal examinations during pregnancy led patients to overrate the importance of the obstetric and gynecologists' role in pregnancy, as pregnant patients receive these vaginal examinations from a physician. This issue is complicated by the legal system in Italy (31). In low-risk pregnancies, the counseling on pregnancy examinations and care should be appropriate to produce an appropriate perception of obstetric risk of adverse outcomes. If patients understood that even low-risk pregnancies may have unpredictable adverse outcomes, they may be more accepting of bad outcomes when they occur, and less likely to pursue criminal litigation from their health-care providers. With education, the culture in Italy may shift such that a good pregnancy outcome is not perceived to be a physician's merit and a bad pregnancy outcome is not perceived to be a physician's failure.

Patients seem interested to learn more about pregnancy, as they reported that they have sought information on pregnancy on the Internet and have been

**Table 2.** Association between number of examinations and high rating (Likert score 4 and 5).

Item	High importance perception Odds ratio (95% CI)	<i>p</i>
Vaginal examinations -More than 3*:	2.016 (1.315-3.091)	0.001
Sonographic checks -More than 3**:	2.217 (1.203-4.087)	0.011
Blood lab analyses -More than 8*:	0.490 (0.300-0.799)	0.004
Cardiotocography -More than 1 (performed and/or planned):	2.622 (1.651-4.164)	<0.001
Midwives-led care -Yes:	23.294 (11.617-46.709)	<0.001
Obstetric and Gynecologist-led care -Yes:	74.389 (21.442-258-073)	<0.001
Iron and vitamin supplementation (3 <sup>rd</sup> trimester) -Yes:	24.975 (13.662-45.657)	<0.001
Delivery courses -Yes:	0.573 (0.364-0.901)	0.016
Food cooking and feeding care -Yes:	13.573 (5.145-35.807)	<0.001
Exercise -Yes:	1.029 (0.666-1.592)	n.s.

\*The choice of 3 vaginal examinations as cut-off has been arbitrary. It was judged appropriate at least 1 vaginal examination for trimester.

\*\*Italian law allows to have for free 3 sonographic examinations in low-risk pregnancies (one sonographic check for trimester).

\*\*\*The median value of the number of blood lab analyses was 9 (limits 0-15): the limit for dichotomizing variable was set to 8 arbitrarily, basing on median value.

**Table 3.** Assessment of concordance between higher importance attributed (Likert score 4 and 5) and knowledge of each topic.

Topic	Questions (number)	Odds ratio 95% CI	Interpretation
1. Vaginal examinations	High rating of vaginal examinations importance (Q8)	0.550	Poor knowledge. Vaginal examination is overrated.
	Knowledge that vaginal examinations does not improve pregnancy outcome (Q30)	0.364-0.831 0.005	
2. Sonographic third trimester check	High rating of sonographic checks importance (Q10)	0.891	Poor knowledge.
	Knowledge that III trimester sonography is not recommended (Q31)	0.503-1.580 n.s.	
3. Blood lab analyses	High rating of of lab analyses importance (Q12)	1.729	Poor knowledge.
	Knowledge of the aims of blood sampling* (Q32)	0.981-3.047 n.s.	
4. Cardiotocography	High rating of cardiotocography importance (Q14)	0.602	Poor knowledge.
	Knowledge that in a low risk pregnancy, cardiotocography is not recommended (Q33)	0.333-1.089 n.s.	

Topic	Questions (number)	Odds ratio 95% CI	Interpretation
5. Midwife-led care	High rating of the midwife-led care** (Q16)	9.145	Appropriate knowledge. Midwives' role is properly rated.
	Knowledge that midwife-led care improves pregnancy outcomes (along with breastfeeding) (Q34)	5.706-14.656 <0.001	
	High rating of the midwife-led care** (Q16)	5.070	
	Knowledge that a midwife-led care is recommended in low risk pregnancies (Q35)	3.004-8.559 <0.001	
6. Obstetrics and Gynecologist-led care	High rating of Obstetrics and Gynecologist-led care**** (Q18)	0.345	Poor knowledge. Obstetrics and Gynecologists' role is overrated.
	Knowledge that midwife-led care improves pregnancy outcomes (along with breastfeeding) (Q34)	0.185-0.642 0.001	
	High rating of Obstetrics and Gynecologist-led care**** (Q18)	0.387	
	Knowledge that a midwife-led care is recommended in low risk pregnancies (Q35)	0.222-0.674 0.001	
7. Vitamins and iron supplementation	High perception of needing routinely iron and vitamins supplementation*** (Q20)	1.082	Poor knowledge.
	Knowledge that vitamins and iron (third trimester) routinely supplementation is not recommended (Q36)	0.720-1.628 n.s.	
8. Delivery courses	High rating of the importance of the delivery courses***** (Q22)	0.780	Poor knowledge.
	Knowledge that following delivery courses reduces Cesarean section rate (Q37)	0.509-1.197 n.s.	
9. Food cooking and feeding care	High rating of the importance of type of food to be eating and how to be cooking it (Q26)	4.727	Appropriate knowledge. The topic importance is properly rated.
	Knowledge that avoiding to eat some foods or cooking them may prevent some infectious diseases in pregnancy (Q38)	2.806-7.964 <0.001	
10. Exercise	High rating of importance to make physical activity***** (Q28)	1.990	Appropriate knowledge. Exercise in pregnancy is properly rated
	Knowledge that moderate physical activity does not affect pregnancy outcome (Q39)	1.250-3.169 0.004	

\*One answer was not given. \*\*Five answers were not given. \*\*\*Two answers were not given. \*\*\*\* Eight answers were not given. \*\*\*\*\*Thirteen answers were not given. \*\*\*\*\*Twenty-four answers were not given.

*Odds ratios were calculated excluding cases with one or more missing data.*

conditioned by the experiences of friends and parents (Questions 5 and 6). Moreover, patients seemed to be aware that midwife-led pregnancy care is advisable for low-risk pregnancies (Table 3).

As a consequence of physicians dominating the provision of pregnancy care in Italy, more unnecessary examinations in pregnancy are performed. The high number of examinations increases the odds ratio of rating the examinations as more important (Table 2), suggesting that medicalizing low-risk pregnancy leads

to incorrectly overrate the importance of examinations in achieving a good outcome during delivery.

This study is not able to explain why patients receive many vaginal examinations during pregnancy. An Italian survey on the roots of the failure of the so-called “choosing wisely” has suggested that patients' queries and legal pressure may influence the behavior of performing more unnecessary examinations (32). Thus, it seems that both cultural perspectives and liability issues drive pregnant patients to seek out

physicians for their pregnancy care instead of midwives. The obstetrics and gynecologists recommend more unnecessary examinations, resulting in patients overestimating the importance of not only the obstetrics and gynecologist role, but the examinations as well. Overrating the obstetrics and gynecologist may cause patients to believe that adverse pregnancy outcomes are always due to malpractice and reinforce cultural beliefs that good pregnancy outcomes are always a direct result of a physician's skills. These beliefs ultimately increase legal pressure on both physicians and midwives, as well as other health care providers who may be held criminally liable for adverse outcomes despite them being outside of the provider's control.

Selection bias of the study may have occurred due to the recruitment of at least some patients into the study from a private health care facility. The answers provided by these patients would be heavily influenced by their experiences using private care. However, many Italian women choose private care to manage their pregnancies (33). This choice strengthens our hypothesis that Italian pregnant patients attribute excessive importance to the caregiver rather than to the care itself, as found in our survey.

In conclusion, low-risk pregnant women have generally poor knowledge about pregnancy care and place more importance on the caregiver, the obstetrics and gynecologist physicians, than the care itself. Italian Governmental Institutions should better inform low-risk pregnant women on the most appropriate pregnancy care, such as the benefits of using midwife-led instead of physician-led pregnancy care. Italian Governmental Institutions must concurrently develop policies that ease the legal pressure on Italian health workers.

The study was conducted at the *Fabia Mater* Clinic of Rome (Italy) and online.

**Conflicts of interest:** Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article.

## References

1. Indraccolo U, Calabrese S, Di Iorio R, Corosu L, Marinoni E, Indraccolo SR. Impact of the medicalization of labor on mode of delivery. *Clin Exp Obstet Gynecol* 2010; 37: 273-7.
2. Ricchi A, Rossi F, Borgognoni P, et al. The midwifery-led care model: a continuity of care model in the birth path. *Acta Biomed* 2019; 90(6-S): 41-52.
3. <https://apps.who.int/iris/bitstream/handle/10665/250796/9789241549912-eng.pdf;sequence=1> (accessed 13 Aug 2020).
4. Pozzi N, Cocca F, Pannella G, D'Addona M, Borrelli AC. Obstetric education and neonatal resuscitation at birth: an Italian survey. *J Matern Fetal Neonatal Med* 2020; doi: 10.1080/14767058.2020.1846701
5. Ferrazzi E, Visconti E, Paganelli AM, et al. The outcome of midwife-led labor in low-risk women within an obstetric referral unit. *J Matern Fetal Neonatal Med* 2015; 13: 1530-6.
6. Dante G, Neri I, Bruno R, Salvioli C, Facchinetti F. Perinatal and maternal outcomes in a midwife-led centre in Italy: a comparison with standard hospital assistance. *Minerva Ginecol* 2016; 68: 237-42.
7. Morano S, Cerutti F, Mistrangelo E, et al. Outcomes of the first midwife-led birth centre in Italy: 5 years' experience. *Arch Gynecol Obstet* 2007; 4: 333-7.
8. Dani C, Papini S, Iannuzzi L, Pratesi S. Midwife-to-newborn ratio and neonatal outcome in healthy term infants. *Acta Paediatr* 2020; 109: 1787-90.
9. Svanera C, Nelli E, Colciago E, Fumagalli S. Midwifery-led care for normal childibirth pathway in Lombardy region. *Minerva Ginecol* 2017; 69: 115-7.
10. <https://www.consulenzalegaleitalia.it/responsabilita-medica-ginecologo-ostetrica/> (accessed 18 Jan 2021).
11. <http://www.fnopo.it/la-professione.htm> (accessed 18 Jan 2021).
12. [https://ape.agenas.it/documenti/provider/FNCO\\_Fed.\\_Naz.\\_Collegi\\_ostetriche.pdf](https://ape.agenas.it/documenti/provider/FNCO_Fed._Naz._Collegi_ostetriche.pdf) (accessed 18 Jan 2021).
13. Amaral-Garcia S, Bertoli P, Grempi V. Does experience rating improve Obstetric practices? Evidence from Italy. *Health Econ* 2015; 24: 1050-64.
14. Indraccolo U, Indraccolo SR, Greco P, Fedeli P. A case of stillbirth caused by rupture of an intrahepatic hemangioma and the wish for litigation. *Clin Exp Obstet Gynecol.* 2020; 47 (3): 452-4.
15. Verteramo R, Picarelli V, Labianco S, et al. Vaginal deliveries after Cesarean section: heterogeneity of outcome according to the hospital policies in Italy. *It J Gynaecol Obstet* 2019; 31: 7-12.
16. Indraccolo U, Iannicco AM, Buccioni M, Micucci G. Dangers and expenses of a first-level Obstetric facility: a serious Italian concern. *It J Gynaecol Obstet* 2015; 27: 121-4.



17. Indraccolo U, Scutiero G, Matteo M, Indraccolo SR, Greco P. Cesarean section on maternal request: should it be formally prohibited in Italy? *Ann Ist Sup Sanita* 2015; 51: 162-6.
18. Indraccolo U. Punches and knocks to the physicians: choosing wisely or self protection? *Recenti Prog Med* 2016; 107: 607-8.
19. Davoli M, Colais P, Fusco M. [Give birth in Italy is a “surgical” procedure]. *Recenti Prog Med* 2016; 107: 559-61.
20. Magnavita N, Heponiemi T. Violence towards health care workers in a Public Health Care Facility in Italy: a repeated cross-sectional study. *BMC Health Serv Res* 2012; 12: 108.
21. Indraccolo U, Scutiero G, Greco P. Correction of the sensitivity reported in the 2015 Italian Society of Obstetrical and Gynecological Ecography (SIEOG) guidelines for the ecographic screening of fetal malformations: a meta-analytic approach. *Clin Exp Obstet Gynecol* 2018; 45: 651.
22. Frati P, Gulino M, Turillazzi E, Zaami S, Fineschi V. The physician’s breach of the duty to inform the parent of deformities and abnormalities in the foetus: “wrongful life” actions, a new frontiers of medical responsibility. *J Matern Fetal Neonatal Med* 2014; 27: 1113-7.
23. [http://www.snlg-iss.it/cms/files/LG\\_Gravidanza.pdf](http://www.snlg-iss.it/cms/files/LG_Gravidanza.pdf) (viewed 17 February 2017)
24. [http://www.snlg-iss.it/cms/files/LG\\_Cesareo\\_finaleL.pdf](http://www.snlg-iss.it/cms/files/LG_Cesareo_finaleL.pdf) (viewed 17 February 2017)
25. [https://www.sigo.it/wp-content/uploads/2015/12/Linee-GuidaSieog\\_2015.pdf](https://www.sigo.it/wp-content/uploads/2015/12/Linee-GuidaSieog_2015.pdf) (viewed 30 July 2020).
26. Grivell RM, Alfirevic Z, Gyte GM, Devane D. Antenatal cardiotocography for fetal assessment. *Cochrane Database Syst Rev* 2015; 2015: CD007863.
27. Hatem M, Sandall J, Devane D, Soltani H, Gates S. Midwife-led versus other models of care for childbearing women. *Cochrane Database Syst Rev* 2008: CD004667.
28. Wiebe HW, Boulé NG, Chari R, Davenport MH. The effect of supervised prenatal exercise on fetal growth: a meta-analysis. *Obstet Gynecol* 2015; 125: 1185-94.
29. Bricker L, Medley N, Pratt JJ. Routine ultrasound in late pregnancy (after 24 weeks’ gestation). *Cochrane Database Syst Rev* 2015: CD001451.
30. [https://webarchive.nationalarchives.gov.uk/20130123200917/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_109832](https://webarchive.nationalarchives.gov.uk/20130123200917/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_109832) (accessed 30 Jul 2020).
31. Scioscia M, Vimercati A, Cito L, Chironna E, Scattarella D, Selvaggi LE. Social determinants of the increasing caesarean section rate in Italy. *Minerva Ginecol* 2008; 60: 115-20.
32. Vernero S, Giustetto G. [A survey carried out among Italian physicians regarding non-required clinical examinations, treatments and procedures in the current clinical practice: results and considerations.] *Recenti Prog Med* 2017; 108: 324-32.
33. [https://salute.regione.emilia-romagna.it/siseps/sanita/cedap/files/cedap\\_rapporto\\_dati-2018.pdf](https://salute.regione.emilia-romagna.it/siseps/sanita/cedap/files/cedap_rapporto_dati-2018.pdf) (accessed 23 Jan 2021).

---

**Correspondence:**

Received: 21 August 2020

Accepted: 6 February 2021

Dr Ugo Indraccolo, M.D., Ph.D.

Via P. Veronese 2/c

06024 Gubbio (PG), Italy.

Mobile +39 328 6180677

Fax: +39 0737 636668

e-mail: ugo.indraccolo@libero.it

