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The proliferation of gynaecological scientific societies and their financial transparency: an Italian survey

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1 THE PROLIFERATION OF GYNAECOLOGICAL SCIENTIFIC SOCIETIES: AN
2 ITALIAN SURVEY

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22

23 ABSTRACT

24 **Objectives:** To determine the number of Italian obstetrical and gynaecological societies and
25 to ascertain the level of financial transparency, particularly of those associations providing
26 CME activities.

27 **Design:** Internet-based national survey.

28 **Setting:** Academic obstetrical and gynaecological department.

29 **Participants:** Currently active, not privately owned, non-religious, apolitical, obstetrical and
30 gynaecological associations.

31 **Intervention:** Scientific societies were identified using a combination of search terms,
32 examining the website of the two main Italian obstetrical and gynaecological organisations,
33 and through direct contacts. Individual societies' websites were searched and scrutinised by
34 two independent investigators.

35 **Primary and secondary outcome measures:** Number of Italian obstetrical and
36 gynaecological, and overspecialised organisations; variation in the number of associations
37 over time; provision of CME activity; declaration of competing interests of board members;
38 published annual financial balance; details of restricted and unrestricted industry grants or
39 individual donations; quantification of industry support for educational events.

40 **Results:** The initial web search yielded 55 professional obstetrical and gynaecological
41 associations, but eight were excluded for various reasons. Of the remaining 47 professional
42 associations 18 covered both obstetrics and gynaecology, four were overspecialised in
43 obstetrics, 25 in gynaecology, and 46 provided CME activities. The number of societies has
44 quadrupled in the last 35 years, increasing at a mean rate of one additional society per year.
45 The headquarters of the associations were hosted at the offices of a professional congress

46 organiser in 13 instances, and advertisements or links to industry products were present in 12
47 societies' websites. No information was publicly available regarding competing interests and
48 source of funding.

49 **Conclusions:** The number of obstetrical and gynaecological societies is remarkably high in
50 Italy, particularly in the gynaecological area. This may result in wastage of resources.
51 Transparency of societies regarding financial issues and competing interests is non-existent,
52 and health authorities' interventions seem warranted, especially considering that almost all
53 associations provide CME activities.

STRENGTHS AND LIMITATIONS OF THE STUDY

- Different search strategies were adopted to identify all currently active Italian obstetrical and gynaecological scientific societies, i.e., Internet, executive personnel of the two main national organisations, and direct contacts with some presidents and past-presidents.
- Two independent investigators retrieved information, and data were abstracted on standardised forms.
- Taking a selected picture of a specific country is a limit of the study that impedes generalisation of the findings.

64 CONTRIBUTION TO AUTHORSHIP

65 PVe, PVi and ES conceived and planned the article. All the authors searched the web to
66 identify Italian obstetrical and gynaecological societies. PVe and MPF scrutinised the
67 societies' websites, retrieved and tabulated data. All the authors interpreted the data. PVe
68 drafted the manuscript and PVi, MPF, and ES revised it. All the authors approved the final
69 version of the manuscript.

70

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72 This research received no specific grant from any funding agency in the public, commercial
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74

75 COMPETING INTEREST STATEMENT

76 All authors have completed the ICMJE uniform disclosure form at
77 www.icmje.org/coi_disclosure.pdf and declare: no support from any organisation for the
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79 in the submitted work in the previous three years; no other relationships or activities that
80 could appear to have influenced the submitted work; PVe is associate editor of Human
81 Reproduction Update and past president of the World Endometriosis Society; PVi is associate
82 editor of Human Reproduction; ES is deputy editor of Human Reproduction.

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84 ETHICAL APPROVAL STATEMENT

85 Ethic Committee's approval was not required for this survey.

86 INTRODUCTION

87 The core mission of medical societies is dissemination of scientific information. They foster
88 research in distinct fields of medicine, promote medical education, and develop clinical
89 guidelines. Authoritative medical associations are also influential in modulating practice,
90 counselling administrators, advising politicians regarding public healthcare programmes, and
91 regulating professional conduct. Thus, the social role of these organisations entails
92 exceedingly important clinical and ethical implications.[1]

93 The past decades have witnessed a tendency toward proliferation of medical societies
94 focussed on subspecialty areas or even single diseases, paralleling the general trend of modern
95 medicine in the direction of over-specialisation. The intrinsic benefit of creating small and
96 overspecialised associations is the possibility of increasing knowledge on specific disorders.
97 However, compared with major national and international organisations, small societies may
98 have lesser impact regarding public advocacy, information of healthcare decision makers, and
99 definition of public health systems' strategies. Moreover, small societies generally have
100 restricted financial resources, thus their possibility to fund research seems limited. In this
101 regard, the proliferation of overspecialised medical associations could also be viewed as a
102 potential wastage of precious resources that could be invested more efficiently in the interest
103 of patients.

104 In addition, the quality of the information disseminated by small scientific
105 organisations should be scrutinised with particular care. Intellectual independence is essential,
106 especially when providing continuing medical education (CME) activity,[2] but
107 fragmentation and overspecialisation may expose medical societies to increased financial
108 vulnerability and, hypothetically, this could results in an increase in the risk of undue
109 influence of pharmaceutical, biotechnology, and device industries. Overall, competing

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110 interests of professional medical societies are more serious than individual ones.[3] However,
111 contrary to the great attention given to individual and institutional competing interests, those
112 of professional medical associations have received little coverage in spite of the above ethical
113 implications and the potential substantial consequences on prescribing practices.[3] Although
114 competing interests and bias are not synonymous, the former is a demonstrated risk factor for
115 the latter.[2]

116 The phenomenon of proliferation of professional organisations appears particularly
117 flourishing in the gynaecological field, probably owing to the multitude of issues regarding
118 women's health. Therefore, we decided to conduct a survey in order to examine the condition
119 of obstetrical and gynaecological societies in Italy. The primary objectives were to determine
120 the overall number of associations and to verify whether a trend exists towards an increase in
121 the number of overspecialised organisations over time. Secondary aims were to ascertain the
122 societies' level of transparency regarding general competing interests and funding from
123 industry, and to evaluate if a relation exists between the provision of CME activity and the
124 degree of financial transparency.

125 METHODS

126 This survey was conducted retrieving and analysing information from the Internet. As
127 publicly available data were used, the present study was exempt from Ethics Committee's
128 approval. The study was restricted to professional organisations currently active in Italy.
129 Combinations of Italian terms "obstetrics", "obstetrical", "gynaecology", "gynaecological",
130 "society", "association", "federation", "organisation", "Italian", and "Italy" were used. In
131 addition, the websites of the two major national obstetrical and gynaecological societies
132 (Società Italiana di Ginecologia e Ostetricia, SIGO; Associazione Ostetrici Ginecologi
133 Ospedalieri Italiani, AOGOI) were examined with the objective of identifying all the

134 affiliated overspecialised organisations in the field. All authors independently conducted the
135 initial search from October 31 to November 7, 2014. After completion of the list of
136 associations, these were categorised, based on their name, into combined obstetrical and
137 gynaecological, obstetrical only, and gynaecological only organisations.

138 Individual societies' websites were then independently searched and scrutinised from
139 November 8 to December 12, 2014 by two authors (PVe and MPF), in order to verify the
140 correctness of the initial categorisation, and to ascertain whether the association was public,
141 and with a defined mission, a regular board, and published bylaws. Individual or privately
142 owned organisations, those not specifically aimed at physicians, and those with a religious or
143 political profile were excluded. Moreover, data were collected on standardised abstraction
144 forms regarding the year of establishment of the society, provision of CME activity, whether
145 the headquarters was independent or located at the offices of a professional congress
146 organiser, and if advertisements or links to industry websites were present. In cases where the
147 information on year of establishment was missing, the executive staffs of the above two major
148 national obstetrical and gynaecological societies were consulted by emails and phone calls.
149 Moreover, PVe contacted directly the presidents and selected board members of some
150 associations in order to obtain missing data from original documents.

151 We planned to assess financial transparency examining the societies' websites for the
152 following data and information: published annual financial balance, declaration of competing
153 interests of board members and executive personnel, details of restricted and unrestricted
154 industry grants or individual donations, and quantification of industry support for annual
155 meetings, courses, and other educational events.

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A final extraction form was compiled from the two separate evaluation forms, with correction or resolution of any discrepancies between abstractors by consensus reached after discussion or further conjoint re-examination of selected societies' websites.

The chi-squared test based on a 1x2 table was used to examine the distribution of obstetrical only and gynaecological only associations at the end of the study period. A balanced distribution (expected probability = 0.5) was considered a reasonable assumption.

RESULTS

The initial web search yielded 55 professional obstetrical and gynaecological associations, but two were immediately excluded because they were renowned as being privately owned (Società Italiana Studi di Medicina della Riproduzione, SISMeR) or individually conducted (Fondazione Graziottin per la Cura del Dolore nella Donna). Examination of societies' websites resulted in the exclusion of three organisations with defined socio-political or religious characteristics (Associazione Italiana Ginecologi Ostetrici Cattolici, AICOG; Società Italiana Procreazione Responsabile, SIPRe; Libera Associazione Italiana Ginecologi per l'Applicazione della Legge 194/78, LAIGA). Another association was excluded as apparently not currently active (Società Italiana di Endoscopia e Laserterapia in Ginecologia, SIELG). Only one reviewer excluded two further organisations. Conjoint re-examination of the two websites demonstrated that the activity of one association (Fondazione Confalonieri Ragonese) was limited to drafting clinical practice recommendations on behalf of AOGOI, whereas the activity of the other one (Associazione Italiana di Ostetricia, AIO) was aimed mainly at midwives rather than physicians. A shared decision was taken to exclude also these latter two organisations.

Summary characteristics of the remaining 47 professional associations are shown in Table 1. Individual societies' details are included in online supplementary Table 2.

TABLE 1. Summary characteristics of professional obstetrical and gynaecological associations extracted from societies' websites. Italy, December 2014.

Clinical and research area	No. with website	CME activity*	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
Obstetrics and gynaecology (n=18)	15	18	13	not available	not available	not available	not available	5	8
Obstetrics only (n=4)	3	4	2	not available	not available	not available	not available	1	0
Gynaecology only (n=25)	22	24	17	not available	not available	not available	not available	7	4

Data are numbers.

*When an association's website was not found, CME activity was identified scrutinising the online programmes of the society's conferences and courses.

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A total of 24 organisations are currently affiliated with SIGO (<http://www.sigo.it/societa-affiliate/>), and seven with AOGOI (<http://www.aogoi.it/opencms/sezioniOriz/societaAffiliate/index.html>). Eighteen "generalist" associations covered both obstetrics and gynaecology (the two major plus 16 minor societies), four were overspecialised in obstetrical topics only, and 25 were overspecialised in gynaecological topics only. In this latter group, seven organisations dealt with infertility. After exclusion of the 18 "generalist" organisations, the distribution of societies' main topics was substantially skewed towards gynaecology (25/29; 86%). This finding is significantly different from the expected 50% ($\chi^2_1 = 15.21$; $P < .0001$). A total of 423 board members were identified, including the presidential trios, treasures and secretaries. Forty-eight members were included at the same time in the board of two distinct organisations, 14 members in the board of three organisations, and five in the board of four organisations.

Forty-six associations provided CME activities. Seven societies did not appear to have a website. In these cases, CME activity was identified scrutinising the online programmes of the societies' conferences and courses. In 12 cases, including those in which a website could not be found, the year of establishment of the association was obtained from SIGO or AOGOI executive personnel, and from direct contacts between PVe and presidents or past-presidents. In the period 1980-2014 the number of Italian obstetrical and gynaecological societies has quadrupled, starting from 12 and increasing at a mean rate of one additional society per year in the last 35 years (Figure 1).

Society's bylaws were published online in 32/40 (80%) identified websites. The headquarters of the associations were independent in 27/40 instances, and hosted at the offices of a professional congress organiser in the remaining 13. Advertisements or links to industry products were present in 12/40 societies' websites. No information was publicly available in any website regarding the source of financial support of the society, as in no case was the

229 annual financial balance published online, and no data was accessible on restricted and
230 unrestricted industry grants or individual donations, as well as industry sponsorship for annual
231 meetings, courses, or other educational events. Moreover, competing interests of board
232 members and executive staff were not disclosed.

233 DISCUSSION

234 The results of the present survey on Italian obstetrical and gynaecological societies depict an
235 academic scenario that warrants consideration. A remarkably high number of organisations
236 was identified, characterised by a progressive and impressive increase over time, especially
237 during the last decades. Taking a selected picture of a specific country is a limit of our study
238 that impedes generalisation of the findings. However, we considered this survey as a sort of
239 pilot study that allowed us defining the general structure of an investigation of this type,
240 identifying reasonable endpoints and specific problems. We are not aware of similar surveys
241 published in the scientific literature, and plan to extend the study to other countries based on
242 the scheme here tested.

243 The observed disproportion in the distribution of overspecialised associations
244 decidedly cannot be explained by unequal distribution of the clinical content of the two main
245 areas of the addressed specialty, obstetrics and gynaecology. Thus, it could be hypothesised
246 that Italian gynaecologists were more scientifically proactive compared with their obstetrical
247 colleagues, but we could not find evidence supporting this interpretation. Indeed, searching
248 PubMed for “obstetrics AND Italy” and “gynaecology AND Italy” yielded a fairly similar
249 number of publications, that is, 8056 compared with 8352 (51% versus 49%; accessed on
250 March 24, 2015). An alternative theoretical explanation of this odd observation is that
251 commercial sponsorship skewed the topics in favour of disorders from which a larger profit
252 could be made. In this regard, gynaecology might reveal a more lucrative medical area

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253 compared with obstetrics, at least in terms of market for several costly new drugs, surgical
254 devices, and diagnostic tools. The first Open Payment data shows that several manufacturers
255 of drugs or devices for gynaecologists are among the top highest spending US companies by
256 payment to physicians, and gynaecology is second only to orthopaedic surgery in terms of
257 highest value of shares held by physicians.[4] Nonetheless, a direct relation between the
258 number of existing scientific societies in a given specialty area and the degree of industry
259 influence on the relevant medical community appears very difficult to demonstrate.

260 The financial transparency of the included organisations could not be assessed, as we
261 were unable to retrieve relevant, publicly available information. This could be regarded as a
262 further weakness of the study, but we believe that this is indeed a crucial finding, and that
263 bringing such an issue into the spotlight could be important *per se*, especially when CME
264 activity is involved. Seven associations did not even appear to have a website, thus equalling
265 total lack of publicly available information of any kind. Unfortunately, online publishing of
266 annual budgets and data regarding financial support is not a legal requirement for Italian
267 scientific societies, and we could not identify alternative sources of information. Therefore,
268 we could not verify if and to what extent financial relations were in place between Italian
269 obstetrical and gynaecological associations and industry, and we are unable to reject the
270 hypothesis that they do not exist. According to Kassirer, "the extent of financial support of
271 these organisations and the connections between industry support and any possible influence
272 on society policies and practices are a closely guarded secret".[5]

273 Almost all the identified societies provided CME activity through conferences and
274 courses. Lack of disclosure, in societies' websites, regarding industry support for scientific
275 events involving CME activity (or lack of a website) is neither surprising nor unlawful, but
276 raises ethical concerns. Some relevant information can be retrieved from the website of the
277 Agenzia Nazionale per i Servizi Sanitari Regionali (Age.na.s), which manages the national

CME program on behalf of the Italian Ministry of Health. However, data are uneasy to retrieve and apparently not systematically or promptly updated. Moreover, although the industries sponsoring the events are listed, the financial support is expressed as a relative percentage of an overall budget that is not quantified (http://ecm.agenas.it/BancaDati/SB_Lista_Cerca_Accr.asp; accessed on March 23, 2015). We also tried to retrieve relevant information directly from individual regional administrations, but without success.

Independently of legal requirements, we believe that scientific societies should provide data on industry support of CME activity spontaneously, and should publish it on their websites.[6, 7] This seems particularly important when the organisations providing CME activity do not have independent headquarters, but are hosted by professional congress organisers (13 cases in our survey, 8 of which in the gynaecological group), or when advertisements or links to industries' products are included in their websites.

Competing interests of members of societies' boards and executive committees were not disclosed, and this appears somewhat concerning.[1, 8, 9] In general, finding experts without competing interests is difficult, and ideally they could all be concentrated in the boards of a few major obstetrical and gynaecological societies. The multiplication of boards and committees needed as a consequence of the proliferation of smaller organisations, particularly in the gynaecological area, implies that most of their directors and executives will have competing interests, simply because there are no sufficient experts without them to cover the available positions. This may have implications regarding a series of societal activities, including the production of practice guidelines.[10] This issue could be emphasised if members with competing interests serve in the board of more than one association.

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301 According to Moynihan,[11] the pharmaceutical industry is currently attempting an
302 audacious repositioning, that is acting as a partner with health services in the provision of
303 patient care instead of the supplier of one element of it. Therefore, the marketing divisions of
304 pharmaceutical industries and device producers appear to be increasingly targeting medical
305 societies in addition to individual physicians. Within this strategy, establishing solid ties may
306 reveal easier with smaller rather than larger associations. Moreover, the proliferation of
307 professional organisations might also result in an overall increase in medical overuse.
308 Therefore, it is currently unclear if the observed progressive growth in the number of
309 gynaecological associations, together with the relative congresses and courses, does more
310 good than harm to the end user, that is, the patient.[12] Future research should aim at
311 verifying whether this phenomenon results exclusively in enhanced knowledge and translates
312 in better care of women's health, or if it also facilitates the dissemination of partly biased
313 information within the scientific community.

314 Finally, Italian scientists should lobby for transparency on public disclosure of
315 competing interests of societies providing CME activity, and should put pressure on the
316 Ministry of Health, asking to grant CME credits to conferences and educational events only
317 provided that attendees are rendered fully and publicly aware of financial connections
318 between the organising scientific society and industry, including quantitative information
319 regarding the monetary support to the considered meetings.[13, 14] Of note, a policy on
320 rigorous control over competing interests has been adopted by some surgical scientific
321 societies, without detrimental consequences in terms of finances, membership, attendance at
322 annual meetings, or leadership recruitment.[15-17] More in general, a sort of Sunshine Act
323 focussed on scientific societies, in addition to that aimed at individual doctors, and with
324 potential application to multiple settings and jurisdictions, could reveal of great benefit for
325 patients, practicing physicians, and clinical investigators.[8, 9, 13] Although disclosure does

326 not resolve or eliminate competing interests,[18, 19] a complete lack of publicly available and
327 easily retrievable information on the above issues, nowadays appears hardly justifiable and
328 ethically questionable.

For peer review only

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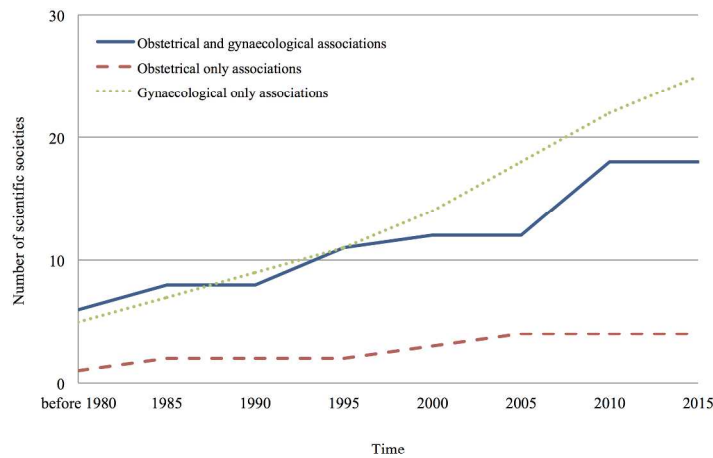
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371 FIGURE LEGEND

372 Variation in the number of Italian obstetrical and gynaecological societies over time.
373 Continuous line, associations covering both obstetrics and gynaecology; dashed line,
374 obstetrical only associations; dotted line, gynaecological only associations.

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209x297mm (300 x 300 DPI)

TABLE 2. Details of the characteristics of professional obstetrical and gynaecological associations extracted from individual societies' websites.*
Italy, December 2014.

Name of the association/society	Established Year	CME activity	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members, and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
AGEO Associazione Ginecologi Extra Ospedalieri (Association of off hospital gynaecologists) http://www.ageo-federazione.it	1996	Yes	Yes	No	No	No	No	Yes	No
AGICO Associazione Ginecologi Consultoriali (Association of family clinic gynaecologists) http://www.agico.it/Agico-2007/home.asp	1985	Yes	Yes	No	No	No	No	No	Yes
AGIF Associazione Ginecologi Italiani in Formazione (Association of in-training Italian gynaecologists) http://www.giovaniginecologi.org/home/	2009	Yes	Yes	No	No	No	No	Yes	No
AGITE Associazione Ginecologi Territoriali (Association of territorial gynaecologists) http://www.agite.eu/	2007	Yes	Yes	No	No	No	No	No	No

TABLE 2. Details of the characteristics of professional obstetrical and gynaecological associations extracted from individual societies' websites.*

Italy, December 2014 (continued).

Name of the association/society	Established Year	CME activity	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members, and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
AGUI Associazione Ginecologi Universitari Italiani (Association of Italian academic gynaecologists) http://www.aguionline.it/	1992	Yes	Yes	No	No	No	No	Yes	Yes
AIGE Associazione Italiana di Ginecologia Endocrinologica (Italian association of gynaecological endocrinology) http://www.ginendo.it/	2003	Yes	No	No	No	No	No	No	No
AIPE Associazione Italiana pre-eclampsia (Italian Branch of the International Society for the Study of Hypertension in Pregnancy) http://www.preeclampsia.it/	2005	Yes	No	No	No	No	No	No	No
AIUG Associazione Italiana di Urologia Ginecologica e del Pavimento Pelvico (Italian association of gynaecologic urology and of pelvic floor) http://www.aiug.eu/aiug.asp	1989	Yes	No	No	No	No	No	No	Yes

TABLE 2. Details of the characteristics of professional obstetrical and gynaecological associations extracted from individual societies' websites.*

Italy, December 2014 (continued).

Name of the association/society	Established Year	CME activity	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members, and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
AOGOI Associazione Ostetrici Ginecologi Ospedalieri Italiani (Association of hospital Italian gynaecologists and obstetricians) http://www.aogoi.it/	1948	Yes	Yes	No	No	No	No	No	Yes
ATGO Associazione Triveneta di Ginecologia e Ostetricia (North-eastern association of gynaecology and obstetrics) http://www.atgo.it/	1934	Yes	No	No	No	No	No	No	Yes
CECOS Centro Studi e Conservazione Ovociti e Sperma Umani (Center for the study and preservation of human oocytes and sperm) http://www.cecos.it/	1984	Yes	Yes	No	No	No	No	No	Yes
CIGO Confederazione Italiana Ginecologi Ospedalieri (Italian confederation of hospital gynaecologists) http://www.cigonline.it/	2008	Yes	Yes	No	No	No	No	No	Yes

TABLE 2. Details of the characteristics of professional obstetrical and gynaecological associations extracted from individual societies' websites.*

Italy, December 2014 (continued).

Name of the association/society	Established Year	CME activity	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members, and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
FIOG Federazione Italiana di Ostetricia e Ginecologia (Italian federation of obstetrics and gynaecology) http://www.fiogonline.it/	2008	Yes	Yes	No	No	No	No	Yes	No
GILT Ginecologi Liguri del Territorio (Territorial gynaecologists of Liguria)	1994	Yes [†]	No website found						
GLUP Gruppo di lavoro in uroginecologia pavimento pelvico (Working group in pelvic floor urogynaecology) http://dev-test.glup.it/	2010	Yes	Yes	No	No	No	No	Yes	No
GREG Gruppo Romano di Endoscopia Ginecologica (Roman group of gynaecological endoscopy)	1995	Yes [†]	No website found						

TABLE 2. Details of the characteristics of professional obstetrical and gynaecological associations extracted from individual societies' websites.*

Italy, December 2014 (continued).

Name of the association/society	Established Year	CME activity	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members, and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
LAMM Società Laziale Abruzzese Marchigiana Molisana di Ostetricia e Ginecologia (Lazio, Abruzzo, Marche, and Molise society of obstetrics and gynaecology)	1971	Yes [†]	No website found						
PRO-FERT Società Italiana di Conservazione della Fertilità (Italian society for the preservation of fertility) http://profert.org/	2007	Yes	Yes	No	No	No	No	No	No
SCCL Società Campano Calabro Lucana di Ostetricia e Ginecologia (Campania, Calabria, and Lucania society of obstetrics and gynaecology)	1947	Yes [†]	No website found						
SEGI Società Italiana di Endoscopia Ginecologica (Italian society of gynaecological endoscopy) http://www.segionline.it/	2000	Yes	Yes	No	No	No	No	No	Yes

TABLE 2. Details of the characteristics of professional obstetrical and gynaecological associations extracted from individual societies' websites.*

Italy, December 2014 (continued).

Name of the association/society	Established Year	CME activity	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members, and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
SIC Società Italiana Contraccezione (Italian society for contraception) http://www.sicontraccezione.it/	2004	Yes	Yes	No	No	No	No	Yes	No
SICHIG Società Italiana di Chirurgia Ginecologica (Italian society of gynaecological surgery) http://www.sichig.it/	1989	Yes	Yes	No	No	No	No	No	No
SICMIG Scuola Italiana di Chirurgia Mini Invasiva Ginecologica (Italian school of minimally invasive gynaecological surgery) http://www.sicmig.org/	2005	Yes	Yes	No	No	No	No	Yes	No
SICPCV Società Italiana di Colposcopia e Patologia Cervico Vaginale (Italian society of colposcopy and cervical and vaginal pathology) http://www.colposcopiaitaliana.it/	1980	Yes	Yes	No	No	No	No	No	No

TABLE 2. Details of the characteristics of professional obstetrical and gynaecological associations extracted from individual societies' websites.*
Italy, December 2014 (continued).

Name of the association/society	Established Year	CME activity	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members, and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
SIDIP Società Italiana di Diagnosi Prenatale e Medicina Materno Fetale (Italian society of prenatal diagnosis and feto-maternal medicine) http://www.ilfeto.it/site/	1998	Yes	Yes	No	No	No	No	No	No
SIDR Società Italiana della Riproduzione (Italian society of reproduction) http://www.sidr.it/cms/view.html	1999	Yes	Yes	No	No	No	No	Yes	No
SIEOG Società Italiana di Ecografia Ostetrica e Ginecologica e Metodologie Biofisiche (Italian society of obstetrical and gynaecological ultrasonography and bio-physical methodologies) http://www.sieog.it/	1984	Yes	Yes	No	No	No	No	No	Yes
SIEPAM Società Italiana Endometriosi e Patologia Mestruale (Italian society of endometriosis and menstrual disorders) http://www.siepam.it/	2014	Yes	No	No	No	No	No	Yes	No

TABLE 2. Details of the characteristics of professional obstetrical and gynaecological associations extracted from individual societies' websites.*

Italy, December 2014 (continued).

Name of the association/society	Established Year	CME activity	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members, and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
SIERR Società Italiana di Embriologia, Riproduzione e Ricerca (Italian society of embryology, reproduction and research) http://www.sierr.it/	1998	Yes	Yes	No	No	No	No	No	No
SIFES E MR Società Italiana di Fertilità e Sterilità e Medicina della Riproduzione (Italian society of fertility, sterility and reproductive medicine) http://sifes.it/	1965	Yes	Yes	No	No	No	No	No	No
SIFIOG Società Italiana di Fitoterapia e Integratori in Ostetricia e Ginecologia (Italian society of phytoterapeutics and supplements in obstetrics and gynaecology) http://www.sifiog.it/	2008	Yes	No	No	No	No	No	Yes	No
SIFR Società Italiana di Fisiopatologia della Riproduzione (Italian society for pathophysiology of reproduction)	1982	Yes [†]	No website found						

TABLE 2. Details of the characteristics of professional obstetrical and gynaecological associations extracted from individual societies' websites.*
Italy, December 2014 (continued).

Name of the association/society	Established Year	CME activity	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members, and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
SIGIA Società Italiana di Ginecologia dell'Infanzia e dell'Adolescenza (Italian society of childhood and adolescent gynaecology) http://www.sigia.it/	1978	Yes	Yes	No	No	No	No	No	No
SIGITE Società Italiana di Ginecologia della Terza Età (Italian society for third age gynaecology) http://www.sigite.it/drupal/index.php	1991	Yes	Yes	No	No	No	No	No	No
SIGO Società Italiana di Ginecologia e Ostetricia (Italian society of gynaecology and obstetrics) http://www.sigo.it/home/	1892	Yes	Yes	No	No	No	No	No	Yes
SIM Società Italiana della Menopausa (Italian society of menopause) http://www.simenopausa.it/	2011	Yes	No	No	No	No	No	Yes	No

TABLE 2. Details of the characteristics of professional obstetrical and gynaecological associations extracted from individual societies' websites.*

Italy, December 2014 (continued).

Name of the association/society	Established Year	CME activity	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members, and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
SIMP Società Italiana di Medicina Perinatale (Italian society of perinatal medicine) http://www.simponline.it/site/home.asp	1984	Yes	Yes	No	No	No	No	Yes	No
SIOG Società Italiana di Oncologia Ginecologica (Italian society of gynaecological oncology) http://www.siog.it	1977	Yes	Yes	No	No	No	No	No	Yes
SIOS Società Italiana Ospedaliera Sterilità (Italian hospital society for sterility) http://www.siosteril.it/	2003	Yes	Yes	No	No	No	No	No	No
SIPGO Società Italiana per la Psicosomatica in Ginecologia e Ostetricia (Italian society for psychosomatics in gynaecology and obstetrics) http://www.sipgo.org/	1993	Yes	Yes	No	No	No	No	No	No

TABLE 2. Details of the characteristics of professional obstetrical and gynaecological associations extracted from individual societies' websites.*

Italy, December 2014 (continued).

Name of the association/society	Established Year	CME activity	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members, and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
SIPO Società Italiana Policistosi Ovarica (Italian society of polycystic ovary syndrome)	2012	Yes [†]	No website found						
SIPPO Società Italiana di Psicoprofilassi Ostetrica (Italian society for obstetrical psycho-prophylaxis)	1966	Yes [†]	No website found						
SIPUF Società Italiana di Pelvi Perineologia e Urologia Femminile e Funzionale (Italian society of pelvi-perineology and female and functional urology) http://www.sipuf.net/sipuf/societa-italiana-di-pelvi-perineologia-e-urologia-femminile-e-funzionale.do	2007	Yes	Yes	No	No	No	No	Yes	No
SIRONG Società Italiana per la Ricerca Ostetrico-Neonatale-Ginecologica (Italian society for the obstetrical, neonatal, and gynaecological research) http://www.sirong.it/	2008	Yes	Yes	No	No	No	No	No	Yes

TABLE 2. Details of the characteristics of professional obstetrical and gynaecological associations extracted from individual societies' websites.*

Italy, December 2014 (continued).

Name of the association/society	Established Year	CME activity	Online society bylaws	Online annual financial balance	Disclosure of competing interests of presidents, board members, and executive staff	Disclosure of financial support (industry grants and individual donations)	Disclosure of industry support for conferences	Offices with professional congress organiser and CME provider	Advertisements or links to industries' websites
SIUD Società italiana di urodinamica (Italian society of urodynamics) http://www.siud.it/	1977	Yes	Yes	No	No	No	No	No	No
SLOG Società Lombarda di Ostetricia e Ginecologia (Lumbardy society of obstetrics and gynaecology) http://www.slog.org/	1950	Yes	Yes	No	No	No	No	No	No
SMIC Società Medica Italiana per la Contraccezione (Italian medical society for contraception) http://www.smicontraccezione.it/	2006	No	No	No	No	No	No	No	No

*In 12 cases, including those in which a website was not found, the year of establishment of the association/society was obtained from the two major national professional associations (i.e., Società Italiana di Ginecologia and Ostetricia and Associazione Ostetrici e Ginecologi Ospedalieri Italiani), and presidents or past presidents of the societies.

†When an association's website was not found, CME activity was identified scrutinising the online programmes of the society's conferences and courses.

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The proliferation of gynaecological scientific societies and their financial transparency: an Italian survey

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1 THE PROLIFERATION OF GYNAECOLOGICAL SCIENTIFIC SOCIETIES AND THEIR
2 FINANCIAL TRANSPARENCY: AN ITALIAN SURVEY

3

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20 Key words: scientific societies, obstetrics, gynaecology, competing interests.

21 Word count: 4132

22

23 ABSTRACT

24 **Objectives:** To determine the number of Italian obstetrical and gynaecological societies, and
25 to ascertain their financial transparency.

26 **Design:** Internet-based national survey and website content analysis.

27 **Setting:** Academic obstetrical and gynaecological department.

28 **Participants:** Currently active, not privately owned, non-religious, apolitical, obstetrical and
29 gynaecological associations.

30 **Intervention:** Scientific societies were identified using combinations of search terms, and
31 examining the website of the two main Italian obstetrical and gynaecological organisations.
32 Individual societies' websites were scrutinised by two independent investigators.

33 **Primary and secondary outcome measures:** Number of Italian obstetrical and
34 gynaecological associations and its variation over time; 12 information categories defining the
35 general characteristics of the societies and their websites, and the financial transparency of the
36 associations.

37 **Results:** The initial web search yielded 56 professional obstetrical and gynaecological
38 associations but nine were excluded for various reasons. Of the remaining 47 professional
39 associations, 17 covered both obstetrics and gynaecology, four were specialised in obstetrics,
40 26 in gynaecology and 46 provided CME activities. The number of societies has quadrupled
41 in the last 35 years, increasing at a mean rate of one additional society per year. The
42 headquarters of the associations were located in the offices of a professional congress
43 organiser in 15 instances, and advertisements or links to industry products were present in 12
44 societies' websites. Bylaws were accessible in 32 websites. No information was publicly

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45 available regarding competing interests, financial statements, and quantitative external
46 funding.

47 **Conclusions:** The number of obstetrical and gynaecological societies is remarkably high in
48 Italy, particularly in the gynaecological area. This may result in waste of resources. Despite
49 CME activity provision, transparency of societies regarding financial issues and competing
50 interests was almost non-existent, thus substantiating several investigators' concerns on the
51 risk of blurring the distinction between education and marketing. Policies regulating
52 interactions between medical associations and industry are available and should be
53 implemented.

STRENGTHS AND LIMITATIONS OF THE STUDY

- Different search strategies were adopted to identify all currently active Italian obstetrical and gynaecological scientific societies, i.e., Internet, executive personnel of the two main national organisations, and direct contacts with some presidents and past-presidents.
- Two independent investigators retrieved information, abstracted data on standardised forms and conducted a website content analysis on 12 items regarding the general characteristics of the medical associations and their websites, as well as societies' financial transparency.
- Taking a selected picture of a specific country is a limitation of the study and impedes generalisation of the findings.

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66 ETHICAL APPROVAL STATEMENT

67 The Ethic Committee’s approval was not required for this survey.

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68 INTRODUCTION

69 The core mission of medical societies is dissemination of scientific information.[1, 2] They
70 foster research in distinct fields of medicine, promote medical education, and develop clinical
71 guidelines. Authoritative medical associations are also influential in modulating practice,
72 counselling administrators, advising politicians regarding public healthcare programmes, and
73 regulating professional conduct. Thus, the social role of these organisations entails
74 exceedingly important clinical and ethical implications.[1-4]

75 However, some authors maintain that economical aspects are progressively eroding
76 the moral foundations of medical associations, increasing the tension between self-interest
77 and ethical principles. [1] In particular, a progressive imbalance has been observed in funding
78 derived from membership dues and grants and contracts awarded by government or charitable
79 foundations, in favour of support from for-profit organisations [1, 5-7]. This situation may
80 generate a conflict of interest (COI), which has been defined as “a set of circumstances that
81 creates a risk that professional judgment or actions regarding a primary interest will be unduly
82 influenced by a secondary interest”. [8] The primary interest of a scientific society is to
83 promote the highest quality of care also through the education of its members. [9] The
84 secondary interest is, in this case, the financial well-being of the society together with the
85 financial profit of some commercial entities. A COI may occur not only if a professional
86 medical organisation (PMA) receives money from manufacturers of drugs or devices used in
87 the same medical area of interest as the society, but also when individual officers of the
88 organisation have personal financial ties to industries that could influence their actions and
89 decisions within the PMA. Of note, COI is a condition, not a behaviour. In other words, when
90 a COI exists, no actual unethical conduct has necessarily arisen. [5] However, although COI
91 and bias are not synonymous, the former is a demonstrated risk factor for the latter.[10]

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92 Two different approaches have been suggested to deal with COIs of PMAs, i.e., a
93 divestment strategy (progressively discontinuing commercial support), and a management
94 strategy (disclosing COIs and adopting rules to limit their potentially pernicious effects).[5, 9]
95 As the operating budget of many PMAs is substantially based on industry funding, the latter
96 policy has generally been preferred, purportedly to ensure stability in organisation functioning
97 and avoid curtailments in services to members. [1, 5-7, 11] To be efficient, any strategy to
98 “manage” COIs about interactions with industry, should be based on thorough financial
99 transparency, particularly, but not exclusively, regarding commercial support of annual
100 meetings. In fact, most PMAs base their financial sustainability on revenues from periodic
101 congresses, as in these occasions industry generally purchases exhibit hall space, sponsors
102 conference sessions or satellite symposia, pays the registration fee for a variable number of
103 attendees, and buys advertising opportunities.[2, 9, 12, 13].

104 Complicating further the above scenario, the past decades have witnessed a tendency
105 toward proliferation of medical societies focussed on subspecialty areas or even single
106 diseases, paralleling the general trend of modern medicine in the direction of over-
107 specialisation. The intrinsic benefit of creating small and subspecialty associations is the
108 possibility of increasing knowledge on specific disorders. However, compared with major
109 national and international organisations, small societies may have less impact regarding
110 public advocacy, information of healthcare decision makers, and definition of public health
111 system strategies. Moreover, small societies generally have restricted financial resources, thus
112 their possibility to fund research seems limited. In this regard, the proliferation of
113 subspecialty medical associations could also be viewed as a potential waste of precious
114 resources that could be invested more efficiently in the interest of patients.

115 In addition, the quality of the information disseminated by small scientific
116 organisations should be scrutinised with particular care. Intellectual independence is essential,

117 especially when providing continuing medical education (CME) activity,[10, 14-16] but
118 fragmentation and subspecialisation may expose medical societies to increased financial
119 vulnerability and, hypothetically, this could result in an increase in the risk of undue influence
120 of pharmaceutical, biotechnology, and device industries. Noteworthy, the percentage of the
121 overall national funding for CME activities provided by industry is particularly high in Italy,
122 with reported figures varying from 60%[17] to almost 100%[18] of the total expenditure.

123 The phenomenon of proliferation of professional organisations appears to be
124 particularly intense in the gynaecological field, probably owing to the multitude of issues
125 regarding women's health. Therefore, we decided to conduct a survey in order to examine the
126 condition of obstetrical and gynaecological societies in Italy. The primary objectives were to
127 determine the overall number of associations and to verify whether a trend exists towards an
128 increase in the number of subspecialty organisations over time. Secondary aims were to
129 ascertain the societies' level of transparency regarding general competing interests and
130 funding from industry, and to evaluate if a relation exists between the provision of CME
131 activity and the degree of financial transparency.

132 METHODS

133 This survey was conducted by retrieving and analysing information from the Internet. As
134 publicly available data were used, the present study was exempt from the Ethics Committee's
135 approval. The study was restricted to professional organisations currently active in Italy.
136 Websites were identified using 'Google', consistently ranked as the most popular search
137 engine (<http://www.google.com>). Combinations of Italian terms "obstetrics", "obstetrical",
138 "gynaecology", "gynaecological", "society", "association", "federation", "organisation",
139 "Italian", and "Italy" were used. In addition, the websites of the two major national obstetrical
140 and gynaecological societies (Società Italiana di Ginecologia e Ostetricia, SIGO;

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141 Associazione Ostetrici Ginecologi Ospedalieri Italiani, AOGOI) were examined with the
142 objective of identifying all the affiliated subspecialty organisations in the field. All authors
143 independently conducted the initial search from October 31 to November 7, 2014. After
144 completion of the list of associations, these were categorised, based on their name, into
145 combined obstetrical and gynaecological, obstetrical only, and gynaecological only
146 organisations.

147 Individual societies' websites were then independently scrutinised from November 8
148 to December 12, 2014, and from June 15 to 19, 2015, by two authors (PVe and MPF), in
149 order to verify the correctness of the initial categorisation, and to ascertain whether the
150 association was public, and with a defined mission and a regular board. Individual or
151 privately owned organisations, those not specifically aimed at physicians, and those with a
152 religious or political profile were excluded. Moreover, information was collected on
153 standardised abstraction forms on 12 items defining two domains, i.e., i) the general
154 characteristics of the society and its website (year of establishment; whether the headquarters
155 were independent or located in the offices of a professional congress organiser and accredited
156 CME provider; online availability of society's bylaws; provision of CME activity; inclusion of
157 sponsored sessions or symposia in the society's last annual meeting program; presence on
158 society's website of industry advertisement or links to industries' websites), and ii) the
159 financial transparency of the association (discussion of financial COIs in society's bylaws;
160 adoption of a policy for interactions with industry; availability of financial COI disclosures of
161 presidential trio, board members and executive staff; online availability of annual financial
162 statement; disclosure of restricted and unrestricted industry grants and individual donations;
163 indication of industry sponsorship in the last annual meeting program based on informative
164 printed text in addition to mere logo inclusion).

In cases where the information on a PMA's year of establishment was missing, the executive staff of the above two major national obstetrical and gynaecological societies were consulted by email and telephone. Moreover, PVe directly contacted the presidents and selected board members of some associations in order to obtain missing data from original documents. A final extraction form was compiled from the two separate evaluation forms, with correction or resolution of any discrepancies between abstractors by consensus reached after discussion or further joint re-examination of selected societies' websites.

In addition, we used the Health on the Net Foundation Code of Conduct [19] for medical websites, with the objective of examining the degree of transparency of the healthcare information provided on the websites of the two major national obstetrical and gynaecological associations, SIGO and AOGOI. The HONcode is an instrument developed to assess the intent of a website to publish accurate information, and it includes items on transparency, financial disclosure, and advertising policy [19].

RESULTS

The initial web search yielded 56 professional obstetrical and gynaecological associations, but two were immediately excluded because they were known to be privately owned (Società Italiana Studi di Medicina della Riproduzione, SISMeR) or individually managed (Fondazione Graziottin per la Cura del Dolore nella Donna). Examination of societies' websites resulted in the exclusion of three organisations with defined socio-political or religious characteristics (Associazione Italiana Ginecologi Ostetrici Cattolici, AICOG; Società Italiana Procreazione Responsabile, SIPRe; Libera Associazione Italiana Ginecologi per l'Applicazione della Legge 194/78, LAIGA). One association was excluded because its activities were unclear and not consistent with those of a regular scientific society (Confederazione Italiana Ginecologi Ospedalieri, CIGO). Another association was apparently

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189 no longer currently active (Società Italiana di Endoscopia e Laserterapia in Ginecologia,
190 SIELG). Only one reviewer excluded two other organisations. Joint re-examination of the two
191 websites demonstrated that the activity of one association (Fondazione Confalonieri
192 Ragonese) was limited to drafting clinical practice recommendations on behalf of AOGOI,
193 whereas the activity of the other one (Associazione Italiana di Ostetricia, AIO) was aimed
194 mainly at midwives rather than physicians. A shared decision was taken to exclude the latter
195 two organisations.

196 Summary characteristics of the remaining 47 professional associations are shown in
197 Table 1. Individual societies' details regarding the general characteristics of the associations
198 and their websites as well as PMAs' financial transparency are included in online
199 Supplementary table 1.

TABLE 1. General characteristics and financial transparency of Italian professional obstetrical and gynaecological associations extracted from their websites.

Clinical and research area	No. with website	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity*	Sponsored session/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
Obstetrics and gynaecology (n=17)	14	7	12	17	4	8	0	0	0	0	0	8
Obstetrics only (n=4)	4	1	2	4	0	0	0	0	0	0	0	0
Gynaecology only (n=26)	23	7	18	25	5	4	0	0	0	1	0	7

Data are numbers. COI = conflict of interest. CME = continuing medical education. PMA = professional medical association.

*When an association's website was not found or when the information was not indicated on website, CME activity was identified scrutinising the online programmes of the society's conferences and courses.

[†] Specific directives regulating professional obstetrical and gynaecological associations' conduct in case of private/commercial financial support.

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A total of 24 organisations were affiliated with SIGO (<http://www.sigo.it/societa-affiliate/>), and six with AOGOI (<http://www.aogoi.it/opencms/sezioniOriz/societaAffiliate/index.html>). Seventeen "generalist" associations covered both obstetrics and gynaecology (the two main ones plus 15 minor societies), four were specialised in obstetrical areas only, and 26 were specialised in gynaecological areas only. In this latter group, seven organisations dealt with infertility, four with pelvic and endoscopic surgery, four with urogynaecology, and two with, respectively, cervical pathology, contraception, and climacteric. After exclusion of the 17 "generalist" organisations, the distribution of societies' main area of interest was substantially skewed towards gynaecology (26/30; 87%).

Six societies did not appear to have a website. In 12 cases, including those in which a website could not be found, the year of establishment of the association was obtained from SIGO or AOGOI executive personnel, and from direct contact between PVe and presidents or past-presidents. In the period 1980-2014 the number of Italian obstetrical and gynaecological societies has quadrupled, starting from 12 and increasing at a mean rate of one society per year in the last 35 years (Figure 1).

The headquarters of the associations were independent in 26/41 instances, and located in the offices of a professional congress organiser and accredited CME provider in the remaining 15. Society's bylaws were published online on 32/41 (78%) of the identified websites. Forty-six associations provided CME activities. When an official society's website was not identified or when the information was not indicated on website, CME activity was verified by scrutinising the online programmes of the societies' conferences and courses. A total of 9/46 associations included sponsored sessions or symposia in their last annual meeting program. Advertisements or links to industry products were present on 12/41 societies' websites (8 in the obstetrical and gynaecological subgroup and 4 in the gynaecological only subgroup).

With regard to financial transparency, in none of the 32 bylaws posted online was the issue of COIs mentioned. No association had apparently developed a policy for interactions with industry. A total of 423 board members were identified, including the presidential trios, treasures and secretaries. Forty-eight members were included at the same time on the board of two distinct organisations, 14 members on the board of three organisations, and five on the board of four organisations. The competing interest disclosures of board members and executive staff were never posted on societies' websites.

The annual financial statement was published online in only one case and, with this exception, no information was publicly available on any other website regarding the society's source of financial support, as no data was accessible on restricted and unrestricted industry grants or individual donations, nor on industry sponsorship for the last annual meetings, courses, or other educational events.

Evaluation of transparency of SIGO and AOGOI websites according to the HONcode principles [19] identified the some lack of information. In particular, neither website attributed certain health/medical information to an author; the sources of the funding of both sites were not clearly described; advertising was not always identified as such; and the sites were part of a link/banner exchange but there was no specific description about the site advertising policy. Moreover, the AOGOI website contained information from external source, but no reference to the source was made, whereas the SIGO website did not provide the last modification date and made claims relating to the benefit or performance of a specific medical treatment, commercial product or service based on the author's personal research or opinion.

Both websites provided free CME e-learning courses supported by pharmaceutical industries manufacturing drugs or commercial products used specifically in those medical

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276 areas on which courses were focused. Finally, the SIGO website included descriptions of
277 some campaigns supported by industries with direct or indirect interests in related medical
278 fields.

279 DISCUSSION

280 The results of the present survey on Italian obstetrical and gynaecological societies and
281 content analysis of their websites depict an academic scenario that warrants consideration. A
282 remarkably high number of organisations was identified, characterised by a progressive and
283 impressive increase over time, especially during the last decades. Of note, the gynaecological
284 subgroup was characterised by several replications, particularly in the fertility and sterility,
285 pelvic and endoscopic surgery, and urogynaecology areas. The reason for these duplications is
286 not readily understandable, because a single, large organisation would probably be more
287 efficacious in accomplishing the mission of the society, centralising resources and reducing
288 costs.

289 The observed disproportion in the distribution of subspecialty associations decidedly
290 cannot be explained by unequal distribution of the clinical content of the two main areas of
291 the addressed specialty, obstetrics and gynaecology. Thus, it could be hypothesised that
292 Italian gynaecologists were more scientifically proactive compared with their obstetrical
293 colleagues, but we could not find evidence to support this interpretation. An alternative
294 theoretical explanation of this odd observation is that commercial sponsorship skewed the
295 topics in favour of disorders from which a larger profit could be made. In this regard,
296 gynaecology might prove a more lucrative medical area compared with obstetrics, at least in
297 terms of markets for several costly new drugs, surgical devices, and diagnostic tools. The first
298 Open Payment data shows that several manufacturers of drugs or devices for gynaecologists
299 are among the top highest spending US companies for payment to physicians, and

gynaecology is second only to orthopaedic surgery in terms of the highest value of shares held by physicians.[20] Nonetheless, a direct relation between the number of existing scientific societies in a given specialty area and the degree of industry influence on its medical community appears difficult to demonstrate.

Financial transparency of the organisations included was almost non-existent, as we were unable to retrieve relevant, publicly available information, with the exception of the annual financial statement of a single, small gynaecological association. Six associations did not appear to have a website, thus providing no publicly available information. Unfortunately, online publishing of annual budgets and data regarding financial support is not a legal requirement for Italian scientific societies, and we could not identify alternative sources of information. We could not verify if and to what extent financial relations were in place between Italian obstetrical and gynaecological associations and industry, and we are unable to reject the hypothesis that they did not exist. This also applies to commercial support of annual meetings and educational events, although in this case the obstetrical and gynaecological area would constitute an exception with respect to data on overall industry funding of Italian CME activities.[17, 18]

We used websites as the main source of information regarding a society's financial transparency. It could be argued that websites can be useful to identify national PMAs, but they provide no accurate specific information on COIs and commercial funding. This constitutes a limitation of our study, as we could have sent a questionnaire directly to individual medical organisations or interviewed the president and executive officers. However, the aim of our survey was to verify whether information regarding COIs of board members and industry support of Italian gynaecological societies was easily and publicly accessible, which nowadays means posted on a society's website [16]. The concept of transparency should not imply the need for individual investigation into a society's board

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members or executive staff by doctors and citizens to acquire this type of information, not to mention the unlikelihood of actually obtaining the data of interest.

Almost all the identified societies provided CME activity through conferences and courses. Lack of disclosure, in societies' websites, regarding industry support for scientific events involving CME activity (or lack of a website) is neither surprising nor unlawful, but raises ethical concerns. Some relevant information can be retrieved from the website of the Agenzia Nazionale per i Servizi Sanitari Regionali (Age.na.s), which manages the national CME program on behalf of the Italian Ministry of Health. However, data are not easy to retrieve and apparently not systematically updated. Moreover, although the industries sponsoring the events are listed, the financial support is expressed as a relative percentage of an overall budget that is not quantified (http://ecm.agenas.it/BancaDati/SB_Lista_Cerca_Accr.asp; accessed on March 23, 2015). We also tried to retrieve relevant information directly from individual regional authorities, but without success. Independently of legal requirements, we believe that scientific societies should provide data on industry support of CME activity spontaneously, and should post it on their websites. This seems particularly important when the organisations delivering CME activity, which is a source of income for the provider, do not have independent headquarters, but are hosted by professional congress organisers that may receive money also from pharmaceutical companies and manufacturers of medical devices,[21, 22] or when advertisements or links to industry products are included in their websites. However, without a formal evaluation of CME “products” (i.e., scientific quality and compliance with society mandate), no conclusions can be drawn.

Competing interests of members of the boards and executive committees of a society were also not disclosed, and this appears somewhat concerning.[1, 5, 9] In general, finding experts without competing interests is difficult, and ideally they would all be concentrated in

the boards of a few major obstetrical and gynaecological societies. The multiplication of boards and committees needed as a consequence of the proliferation of smaller organisations, particularly in the gynaecological area, implies that most of their directors and executives will have COIs, simply because there are not sufficient experts without COIs to cover all the available positions. This may have implications regarding a society's activities, including the development of practice guidelines.[23] This issue would be greater if members with COIs serve on the board of more than one association.

Taking a selected picture of a specific country is a limit of our study that impedes generalisation of the findings. However, we considered this survey as a sort of pilot study that allowed us to define a general scheme to be adopted for an investigation of this type, identifying reasonable endpoints and specific information categories. We are not aware of similar surveys published in the scientific literature, and believe that the model tested by us could also be used to investigate the condition of PMAs in different specialties and different countries.

Rothman and co-workers described in detail the many potential threats to PMAs' integrity, identified specific COIs that may affect the organisations' activity, and formulated guidelines to prevent undue industry influence aimed at divestment from commercial support rather than management of financial competing interests.[2] In fact, the authors maintain that "PMAs should work toward a complete ban on pharmaceutical and medical device industry funding (\$0), except for income from journal advertising and exhibit hall fees".[2]

The Council of Medical Specialty Societies has issued a code for interactions with companies that includes seven core principles covering COI, financial disclosure, independent program development, and independent leadership.[24] With regard to transparency, the code states that "Societies will make their conflict of interest policies and/or forms available to

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their members and the public”, and “Societies will disclose company support (at a minimum educational grants, corporate sponsorships, charitable contributions, and support of research grants), making this information available to their members and the public”, and “Societies will disclose all financial and uncompensated relationships that key society leaders and members of the board of directors of the society’ membership organization have with companies, making this information available to their members and the public”. [24] Up to now, the code has been signed by 32 member societies of the Council and by 17 non-member societies.[25]

Examples already exist of PMAs disclosing on their website the breakdown of industry contribution toward the consolidated revenue of the society, as well as disclosure statements reported by each member of the board of directors [26], and publishing in meeting programs the company from which payment is received, the amount of payment by categories, and the specific type of relationship held with the company.[27] A policy on rigorous control over COIs has been implemented by several medical and surgical scientific societies,[18, 26-32] in some cases without detrimental consequences in terms of finances, membership, attendance at annual meetings, or leadership recruitment.[27, 29, 30]

According to Moynihan,[33] the pharmaceutical industry is currently attempting an audacious repositioning, that is acting as a partner with health services in the provision of patient care instead of the supplier of one element of it. Therefore, the sales and marketing departments of pharmaceutical industries and device manufacturers appear to be increasingly targeting medical societies in addition to individual physicians.[3-5, 9] Within this strategy, establishing solid ties may prove easier with smaller rather than larger associations. Moreover, the proliferation of professional organisations might also result in an overall increase in medical overuse. Therefore, it is currently unclear if the observed progressive growth in the number of gynaecological associations, together with the relative congresses

and courses, does more good than harm to patients.[34] Future research should aim at verifying whether this phenomenon results exclusively in enhanced knowledge and translates into better care of women's health, or if it facilitates the dissemination of partly biased information within the scientific community.

Italian scientists should lobby for transparency of public disclosure of COIs of societies providing CME activity and on implementation of efficient societies' policies for interactions with industry. Moreover, the Ministry of Health should only grant CME credits to conferences and educational events provided that attendees are fully and publicly aware of financial connections between the scientific society and any industry involved, including quantitative information regarding funding for the meetings.[35-37] More in general, a sort of Sunshine Act focussed on scientific societies and educational activity, in addition to that aimed at individual doctors, and with potential application to multiple settings and jurisdictions, could prove of great benefit for patients, practising physicians, and clinical investigators. A complete lack of transparency on the above issues nowadays appears hardly justifiable and ethically questionable. In fact, COIs of PMAs are more serious than individual ones, because, where distorted information is disseminated at educational events, the effect would be multiplied with potential substantial consequences on prescribing practices of many of the society's members.[3-5] Moreover, the definition of "conflict of interest" itself, in the case of PMAs, may be somewhat misleading as it has been pointed out that a medical organisation's commitment to patients and public health is a moral duty and not a mere interest.[5]

Collaboration between PMAs and research and development departments of pharmacological companies and medical devices manufactures is very important for the advancement of medicine. This form of interaction is welcome in the interest of patients and society. On the other hand, collaboration between PMAs and company marketing departments

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on CME events and society annual meetings, may blur the distinction between the interest of the PMA, which is education, and that of industry, which is selling products.

Despite individual or organisational COIs, the officers of many medical associations may well be disinterested and passionate, and provide valuable activities for the benefit of society members. However, members of PMAs are not the end users of drugs and devices marketed by industry; rather they are the gatekeepers entrusted to make evidence-based recommendations to the real end user, that is, the patient.[9] When the citizens eventually have to pay the bill, either directly or indirectly through national health systems, the conduct of PMAs may not be only based on the presumed good faith of their officers, but should contemplate the provision of publicly available and easily accessible data on financial competing interests. Transparency and disclosures do not eliminate COIs,[38, 39] but may enable doctors and lay people to contextualise the scientific information disseminated in various ways by medical organisations, putting it in the right perspective.

CONTRIBUTION TO AUTHORSHIP

PVe, PVi and ES conceived and planned the article. All the authors searched the web to identify Italian obstetrical and gynaecological societies. PVe and MPF scrutinised the societies' websites, retrieved and tabulated data. All the authors interpreted the data. PVe drafted the manuscript and all the authors revised it. All the authors approved the final version of the manuscript.

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COMPETING INTEREST STATEMENT

All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf and declare: no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years; no other relationships or activities that could appear to have influenced the submitted work; PVe is associate editor of Human Reproduction Update and past president of the World Endometriosis Society; PVi is associate editor of Human Reproduction; ES is deputy editor of Human Reproduction.

DATA SHARING STATEMENT

There are no data in addition to those presented in this report. No statistical testing is reported.

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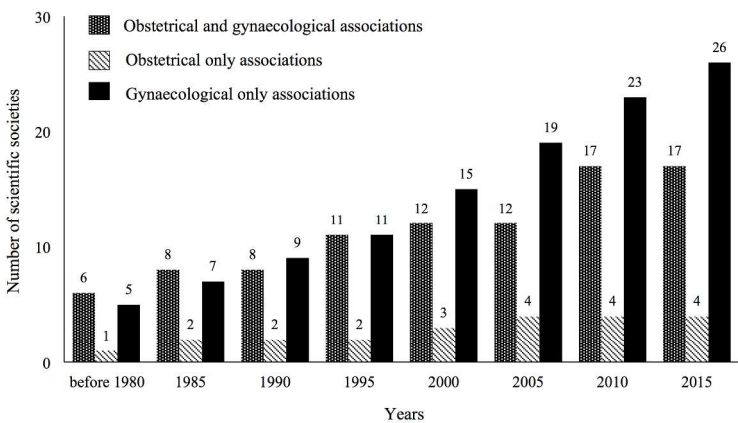
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556 FIGURE LEGEND

557 Variation in the number of Italian obstetrical and gynaecological societies over time. The
558 number on top of each column is the number of societies.

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Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites.*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
AGEO Associazione Ginecologi Extra Ospedalieri (Association of off hospital gynaecologists) http://www.ageo-federazione.it	1996	Yes	Yes	Yes	No	No	No	No	No	No	No	No
AGICO Associazione Ginecologi Consultoriali (Association of family clinic gynaecologists) http://www.agico.it/Agico-2007/home.asp	1985	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes
AGIF Associazione Ginecologi Italiani in Formazione (Association of in-training Italian gynaecologists) http://www.giovaniginecologi.org/home/	2009	Yes	Yes	Yes	No	No	No	No	No	No	No	Yes
AGITE Associazione Ginecologi Territoriali (Association of territorial gynaecologists) http://www.agite.eu/	2007	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes
AGUI Associazione Ginecologi Universitari Italiani (Association of Italian academic gynaecologists) http://www.aguionline.it/	1992	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
AIGE Associazione Italiana di Ginecologia Endocrinologica (Italian association of gynaecological endocrinology) http://www.ginendo.it/	2003	No	No	Yes	No	No	N.A.	No	No	No	No	Yes
AIPE Associazione Italiana pre-eclampsia (Italian Branch of the International Society for the Study of Hypertension in Pregnancy) http://www.preeclampsia.it/	2005	No	No	Yes	No	No	N.A.	No	No	No	No	No
AIUG Associazione Italiana di Urologia Ginecologica e del Pavimento Pelvico (Italian association of gynaecologic urology and of pelvic floor) http://www.aiug.eu/aiug.asp	1989	No	No	Yes	Yes	Yes	N.A.	No	No	No	No	No
AOGOI Associazione Ostetrici Ginecologi Ospedalieri Italiani (Association of hospital Italian gynaecologists and obstetricians) http://www.aogoi.it/	1948	No	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
ATGO Associazione Triveneta di Ginecologia e Ostetricia (North-eastern association of gynaecology and obstetrics) http://www.atgo.it/	1934	No	No	Yes	No	Yes	N.A.	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
CECOS Centro Studi e Conservazione Ovociti e Sperma Umani (Center for the study and preservation of human oocytes and sperm) http://www.cecos.it/	1984	No	Yes	Yes	No	Yes	No	No	No	No	No	No
FIOG Federazione Italiana di Ostetricia e Ginecologia (Italian federation of obstetrics and gynaecology) http://www.fiogonline.it/	2008	Yes	Yes	Yes	No	No	No	No	No	No	No	No
GILT Ginecologi Liguri del Territorio (Territorial gynaecologists of Liguria)	1994	No website found		Yes [‡]	No	No website found						No
GISCi Gruppo Italiano Screening del Cervicocarcinoma (Cervical cancer screening Italian group) http://www.gisci.it/	1996	No	Yes	Yes	Yes	No	No	No	No	Yes	No	Yes
GLUP Gruppo di lavoro in uroginecologia pavimento pelvico (Working group in pelvic floor urogynaecology) http://dev-test.glup.it/	2010	Yes	Yes	Yes	No	No	No	No	No	No	No	No
GREG Gruppo Romano di Endoscopia Ginecologica (Roman group of gynaecological endoscopy)	1995	No website found		Yes [‡]	No	No website found						No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COI of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
LAMM Società Laziale Abruzzese Marchigiana Molisana di Ostetricia e Ginecologia (Lazio, Abruzzo, Marche, and Molise society of obstetrics and gynaecology)	1971	No website found		Yes‡	No	No website found						No
PRO-FERT Società Italiana di Conservazione della Fertilità (Italian society for the preservation of fertility) http://profert.org/	2007	No	Yes	Yes	No	No	No	No	No	No	No	No
SCCL Società Campano Calabro Lucana di Ostetricia e Ginecologia (Campania, Calabria, and Lucania society of obstetrics and gynaecology)	1947	No website found		Yes‡	No	No website found						No
SEGi Società Italiana di Endoscopia Ginecologica (Italian society of gynaecological endoscopy) http://www.segionline.it/	2000	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No
SIC Società Italiana Contraccezione (Italian society for contraception) http://www.sicontraccezione.it/	2004	Yes	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COI of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SICHIG Società Italiana di Chirurgia Ginecologica (Italian society of gynaecological surgery) http://www.sichig.it/	1989	No	Yes	Yes	No	No	No	No	No	No	No	No
SICMIG Scuola Italiana di Chirurgia Mini Invasiva Ginecologica (Italian school of minimally invasive gynaecological surgery) http://www.sicmig.org/	2005	Yes	Yes	Yes	No	No	No	No	No	No	No	No
SICPCV Società Italiana di Colposcopia e Patologia Cervico Vaginale (Italian society of colposcopy and cervical and vaginal pathology) http://www.colposcopiaitaliana.it/	1980	No	Yes	Yes	No	No	No	No	No	No	No	No
SIDIP Società Italiana di Diagnosi Prenatale e Medicina Materno Fetale (Italian society of prenatal diagnosis and feto-maternal medicine) http://www.ilfeto.it/site/	1998	No	Yes	Yes	No	No	No	No	No	No	No	No
SIDR Società Italiana della Riproduzione (Italian society of reproduction) http://www.sidr.it/cms/view.html	1999	Yes	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIEOG Società Italiana di Ecografia Ostetrica e Ginecologica e Metodologie Biofisiche (Italian society of obstetrical and gynaecological ultrasonography and bio-physical methodologies) http://www.sieog.it/	1984	No	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
SIEPAM Società Italiana Endometriosi e Patologia Mestruale (Italian society of endometriosis and menstrual disorders) http://www.siepam.it/	2014	Yes	No	Yes	No	No	N.A.	No	No	No	No	Yes
SIERR Società Italiana di Embriologia, Riproduzione e Ricerca (Italian society of embryology, reproduction and research) http://www.sierr.it/	1998	No	Yes	Yes	No	No	No	No	No	No	No	Yes
SIFES E MR Società Italiana di Fertilità e Sterilità e Medicina della Riproduzione (Italian society of fertility, sterility and reproductive medicine) http://sifes.it/	1965	No	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIFIOG Società Italiana di Fitoterapia e Integratori in Ostetricia e Ginecologia (Italian society of phytoterapeutics and supplements in obstetrics and gynaecology) http://www.sifiog.it/	2008	Yes	No	Yes	No	No	N.A.	No	No	No	No	No
SIFR Società Italiana di Fisiopatologia della Riproduzione (Italian society for pathophysiology of reproduction)	1982	No website found		Yes [‡]	Yes	No website found						No
SIGIA Società Italiana di Ginecologia dell'Infanzia e dell'Adolescenza (Italian society of childhood and adolescent gynaecology) http://www.sigia.it/	1978	No	Yes	Yes	No	No	No	No	No	No	No	No
SIGITE Società Italiana di Ginecologia della Terza Età (Italian society for third age gynaecology) http://www.sigite.it/drupal/index.php	1991	No	Yes	Yes	No	No	No	No	No	No	No	Yes

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COI disclosure of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIGO Società Italiana di Ginecologia e Ostetricia (Italian society of gynaecology and obstetrics) http://www.sigo.it/home/	1892	No	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
SIM Società Italiana della Menopausa (Italian society of menopause) http://www.simenopausa.it/	2011	Yes	No	Yes	No	No	N.A.	No	No	No	No	No
SIMP Società Italiana di Medicina Perinatale (Italian society of perinatal medicine) http://www.simponline.it/site/home.asp	1984	Yes	Yes	Yes	No	No	No	No	No	No	No	No
SIOG Società Italiana di Oncologia Ginecologica (Italian society of gynaecological oncology) http://www.siog.it	1977	No	Yes	Yes	No	Yes	No	No	No	No	No	Yes
SIOS Società Italiana Ospedaliera Sterilità (Italian hospital society for sterility) http://www.siosteril.it/	2003	No	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIPGO Società Italiana per la Psicosomatica in Ginecologia e Ostetricia (Italian society for psychosomatics in gynaecology and obstetrics) http://www.sipgo.org/	1993	No	Yes	Yes	No	No	No	No	No	No	No	No
SIPO Società Italiana Policistosi Ovarica (Italian society of polycystic ovary syndrome)	2012	No website found		Yes [‡]	No	No website found						No
SIPPO Società Italiana di Psicoprofilassi Ostetrica (Italian society for obstetrical psycho-prophylaxis) http://www.sippo.eu/	1966	No	No	Yes [‡]	No	No	N.A.	No	No	No	No	No
SIPUF Società Italiana di Pelvi Perineologia e Urologia Femminile e Funzionale (Italian society of pelvi-perineology and female and functional urology) http://www.sipuf.net/sipuf/societa-italiana-di-pelvi-perineologia-e-urologia-femminile-e-funzionale.do	2007	Yes	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIRONG Società Italiana per la Ricerca Ostetrico-Neonatale-Ginecologica (Italian society for the obstetrical, neonatal, and gynaecological research) http://www.sirong.it/	2008	No	Yes	Yes	No	Yes	No	No	No	No	No	Yes
SIUD Società italiana di urodinamica (Italian society of urodynamics) http://www.siud.it/	1977	No	Yes	Yes	Yes	No	No	No	No	No	No	Yes
SLOG Società Lombarda di Ostetricia e Ginecologia (Lumbardy society of obstetrics and gynaecology) http://www.slog.org/	1950	No	Yes	Yes	No	No	No	No	No	No	No	No
SMIC Società Medica Italiana per la Contraccezione (Italian medical society for contraception) http://www.smicontraccezione.it/	2006	No	No	No	N.A.	No	N.A.	No	No	No	No	N.A.

*In 12 cases, including those in which a website was not found, the year of establishment of the association/society was obtained from the two major national professional associations (i.e., Società Italiana di Ginecologia and Ostetricia and Associazione Ostetrici e Ginecologi Ospedalieri Italiani), and presidents or past presidents of the societies.

† Specific directives regulating professional obstetrical and gynaecological associations' conduct in case of private financial support.

‡ When an association's website was not found or when the information was not indicated on website, CME activity was identified by scrutinising the online programmes of the society's conferences and courses.

COI = conflict of interest. CME = continuing medical education. PMA = professional medical association. N.A. = not applicable.

BMJ Open

The proliferation of gynaecological scientific societies and their financial transparency: an Italian survey

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Primary Subject Heading:	Obstetrics and gynaecology
Secondary Subject Heading:	Medical education and training, Ethics
Keywords:	SCIENTIFIC SOCIETIES, OBSTETRICS, GYNAECOLOGY, COMPETING INTERESTS

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1 THE PROLIFERATION OF GYNAECOLOGICAL SCIENTIFIC SOCIETIES AND THEIR
2 FINANCIAL TRANSPARENCY: AN ITALIAN SURVEY

3

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20 Key words: scientific societies, obstetrics, gynaecology, competing interests.

21 Word count: 4298

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23 ABSTRACT

24 **Objectives:** To determine the number of Italian obstetrical and gynaecological societies, and
25 to ascertain their financial transparency.

26 **Design:** Internet-based national survey and website content analysis.

27 **Participants:** Currently active, not privately owned, non-religious, apolitical, obstetrical and
28 gynaecological associations.

29 **Methods:** Scientific societies were identified using combinations of search terms, and
30 examining the website of the two main Italian obstetrical and gynaecological organisations.
31 Individual societies' websites were scrutinised by two independent investigators.

32 **Primary and secondary outcome measures:** Number of Italian obstetrical and
33 gynaecological associations and its variation over time; 12 information categories defining the
34 general characteristics of the societies and their websites, and the financial transparency of the
35 associations.

36 **Results:** The initial web search yielded 56 professional obstetrical and gynaecological
37 associations but nine were excluded for various reasons. Of the remaining 47 professional
38 associations, 17 covered both obstetrics and gynaecology, four were specialised in obstetrics,
39 26 in gynaecology and 46 provided CME activities. The number of societies has quadrupled
40 in the last 35 years, increasing at a mean rate of one additional society per year. The
41 headquarters of the associations were located in the offices of a professional congress
42 organiser in 15 instances, and advertisements or links to industry products were present in 12
43 societies' websites. Bylaws were accessible in 32 websites. No information was publicly
44 available regarding competing interests, financial statements, and quantitative external
45 funding.

Conclusions: The number of obstetrical and gynaecological societies is remarkably high in Italy, particularly in the gynaecological area. This may result in waste of resources. Despite CME activity provision, transparency of societies regarding financial issues and competing interests was almost non-existent. This may be associated with the risk of blurring the distinction between education and marketing. Policies addressing the issue of interactions between medical associations and industry are available and should be implemented.

STRENGTHS AND LIMITATIONS OF THE STUDY

- Different search strategies were adopted to identify all currently active Italian obstetrical and gynaecological scientific societies, i.e., Internet, executive personnel of the two main national organisations, and direct contacts with some presidents and past-presidents.
- Two independent investigators retrieved information, abstracted data on standardised forms and conducted a website content analysis on 12 items regarding the general characteristics of the medical associations and their websites, as well as societies' financial transparency.
- The data presented describe a selected picture of a specific medical specialty in Italy. The findings cannot be generalised to other medical specialties and other countries.

64 ETHICAL APPROVAL STATEMENT

65 The Ethic Committee’s approval was not required for this survey.

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66 INTRODUCTION

67 A core mission of medical societies is dissemination of scientific information.[1, 2] They
68 foster research in distinct fields of medicine, promote medical education, and develop clinical
69 guidelines. Authoritative medical associations are also influential in modulating practice,
70 counselling administrators, advising politicians regarding public healthcare programmes, and
71 regulating professional conduct. Thus, the social role of these organisations entails
72 exceedingly important clinical and ethical implications.[1-4]

73 However, some authors maintain that economical aspects are progressively eroding
74 the moral foundations of medical associations, increasing the tension between self-interest
75 and ethical principles. [1] In particular, a progressive imbalance has been observed in funding
76 derived from membership dues and grants and contracts awarded by government or charitable
77 foundations, in favour of support from for-profit organisations [1, 5-7]. This situation may
78 generate a conflict of interest (COI), which has been defined as “a set of circumstances that
79 creates a risk that professional judgment or actions regarding a primary interest will be unduly
80 influenced by a secondary interest”. [8] The primary interest of a scientific society is to
81 promote the highest quality of care also through the education of its members. [9] The
82 secondary interest is, in this case, the financial well-being of the society together with the
83 financial profit of some commercial entities. A COI may occur not only if a professional
84 medical organisation (PMA) receives money from manufacturers of drugs or devices used in
85 the same medical area of interest as the society, but also when individual officers of the
86 organisation have personal financial ties to industries that could influence their actions and
87 decisions within the PMA. Of note, COI is a condition, not a behaviour. In other words, when
88 a COI exists, no actual unethical conduct has necessarily arisen. [5] However, although COI
89 and bias are not synonymous, the former is a demonstrated risk factor for the latter.[10]

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90 Two different approaches have been suggested to deal with COIs of PMAs, i.e., a
91 divestment strategy (progressively discontinuing commercial support), and a management
92 strategy (disclosing COIs and adopting rules to limit their potentially pernicious effects).[5, 9]
93 As the operating budget of many PMAs is substantially based on industry funding, the latter
94 policy has generally been preferred, purportedly to ensure stability in organisation functioning
95 and avoid curtailments in services to members. [1, 5-7, 11] To be efficient, any strategy to
96 “manage” COIs about interactions with industry, should be based on thorough financial
97 transparency, particularly, but not exclusively, regarding commercial support of annual
98 meetings. In fact, most PMAs base their financial sustainability on revenues from periodic
99 congresses, as in these occasions industry generally purchases exhibit hall space, sponsors
100 conference sessions or satellite symposia, pays the registration fee for a variable number of
101 attendees, and buys advertising opportunities.[2, 9, 12, 13].

102 Complicating further the above scenario, the past decades have witnessed a tendency
103 toward proliferation of medical societies focussed on subspecialty areas or even single
104 diseases, paralleling the general trend of modern medicine in the direction of over-
105 specialisation. [14] The intrinsic benefit of creating small and subspecialty associations is the
106 possibility of increasing knowledge on specific disorders. However, compared with major
107 national and international organisations, small societies may have less impact regarding
108 public advocacy, information of healthcare decision makers, and definition of public health
109 system strategies. Moreover, small societies generally have restricted financial resources, thus
110 their possibility to fund research seems limited. In this regard, the proliferation of
111 subspecialty medical associations could also be viewed as a potential waste of precious
112 resources that could be invested more efficiently in the interest of patients.

113 In addition, the quality of the information disseminated by scientific organisations
114 should be scrutinised with care. Intellectual independence is essential, especially when

115 providing continuing medical education (CME) activity,[10, 15-17] but fragmentation and
116 subspecialisation may expose medical societies to increased financial vulnerability and,
117 hypothetically, this could result in an increase in the risk of undue influence of
118 pharmaceutical, biotechnology, and device industries. Noteworthy, the percentage of the
119 overall national funding for CME activities provided by industry is particularly high in Italy,
120 with reported figures varying from 60%[18] to almost 100%[19] of the total expenditure.

121 The phenomenon of proliferation of professional organisations appears to be
122 particularly intense in the gynaecological field, probably owing to the multitude of issues
123 regarding women's health. Therefore, we decided to conduct a survey in order to examine the
124 condition of obstetrical and gynaecological societies in Italy. The primary objectives were to
125 determine the overall number of associations and to verify whether a trend exists towards an
126 increase in the number of subspecialty organisations over time. Secondary aims were to
127 ascertain the societies' level of transparency regarding general competing interests and
128 funding from industry, and to evaluate if a relation exists between the provision of CME
129 activity and the degree of financial transparency.

130 METHODS

131 This survey was conducted by retrieving and analysing information from the Internet. As
132 publicly available data were used, the present study was exempt from the Ethics Committee's
133 approval. The study was restricted to professional organisations currently active in Italy.
134 Websites were identified using 'Google', consistently ranked as the most popular search
135 engine (<http://www.google.com>). [20] The following Italian search terms and phrases were
136 used: "Italian obstetrical and gynaecological societies", "obstetrical and gynaecological
137 societies AND Italy", "Italian obstetrical and gynaecological associations", "obstetrical and
138 gynaecological associations AND Italy", "Italian obstetrical and gynaecological federations",

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139 “obstetrical and gynaecological federations AND Italy”, “Italian obstetrical and
140 gynaecological organisations”, “obstetrical and gynaecological organisations AND Italy”. In
141 addition, the websites of the two major national obstetrical and gynaecological societies
142 (Società Italiana di Ginecologia e Ostetricia, SIGO; Associazione Ostetrici Ginecologi
143 Ospedalieri Italiani, AOGOI) were examined with the objective of identifying all the
144 subspecialty organisations in the field affiliated to SIGO and AOGOI. All authors
145 independently conducted the initial search from October 31 to November 7, 2014. After
146 completion of the list of associations, these were categorised, based on their name, into
147 combined obstetrical and gynaecological, obstetrical only, and gynaecological only
148 organisations.

149 Individual societies’ websites were then independently scrutinised from November 8
150 to December 12, 2014, and from June 15 to 19, 2015, by two authors (PVe and MPF), in
151 order to verify the correctness of the initial categorisation, and to ascertain whether the
152 association was public (i.e., not privately owned by single individuals), and with a defined
153 mission and a regular board, including a president, a treasurer, a secretary, and an executive
154 committee. Individual or privately owned organisations, those not specifically aimed at
155 physicians, and those with a religious or political profile were excluded. Moreover,
156 information was collected on standardised abstraction forms on 12 items defining two
157 domains, i.e., i) the general characteristics of the society and its website (year of
158 establishment; whether the headquarters were independent or located in the offices of a
159 professional congress organiser and accredited CME provider; online availability of society's
160 bylaws; provision of CME activity; inclusion of sponsored sessions or symposia in the
161 society's last annual meeting program; presence on society's website of industry advertisement
162 or links to industries' websites), and ii) the financial transparency of the association
163 (discussion of financial COIs in society's bylaws; adoption of a policy for interactions with

industry; availability of financial COI disclosures of presidential trio (president, past president, and president-elect), board members and executive staff; online availability of annual financial statement; disclosure of restricted and unrestricted industry grants and individual donations; indication of industry sponsorship in the last annual meeting program based on informative printed text in addition to mere logo inclusion).

In cases where the information on a PMA's year of establishment was missing, the executive staff of the above two major national obstetrical and gynaecological societies were consulted by email and telephone. Moreover, PVe directly contacted the presidents and selected board members of some associations in order to obtain missing data from original documents. A final extraction form was compiled from the two separate evaluation forms, with correction or resolution of any discrepancies between abstractors by consensus reached after discussion or further joint re-examination of selected societies' websites.

In addition, two authors independently used the Health on the Net Foundation Code of Conduct [21] for medical websites, with the objective of examining the degree of transparency of the healthcare information provided on the websites of the two major national obstetrical and gynaecological associations, SIGO and AOGOI. The HONcode is an instrument developed to assess the intent of a website to publish accurate information, and it includes items on transparency, financial disclosure, and advertising policy [21].

RESULTS

The initial web search yielded 56 professional obstetrical and gynaecological associations, but two were immediately excluded because they were known to be privately owned (Società Italiana Studi di Medicina della Riproduzione, SISMeR) or individually managed (Fondazione Graziottin per la Cura del Dolore nella Donna). Examination of societies' websites resulted in the exclusion of three organisations with defined socio-political or

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religious characteristics (Associazione Italiana Ginecologi Ostetrici Cattolici, AICOG;
Società Italiana Procreazione Responsabile, SIPRe; Libera Associazione Italiana Ginecologi
per l'Applicazione della Legge 194/78, LAIGA). One association (Confederazione Italiana
Ginecologi Ospedalieri, CIGO) was excluded because its activities were unclear and not
typical of a regular scientific society (e.g., organisation of conferences and development of
clinical recommendations). Another association was apparently no longer currently active
(Società Italiana di Endoscopia e Laserterapia in Ginecologia, SIELG). Only one reviewer
excluded two other organisations. Joint re-examination of the two websites demonstrated that
the activity of one association (Fondazione Confalonieri Ragonese) was limited to drafting
clinical practice recommendations on behalf of AOGOI, whereas the activity of the other one
(Associazione Italiana di Ostetricia, AIO) was aimed mainly at midwives rather than
physicians. A shared decision was taken to exclude the latter two organisations.

Summary characteristics of the remaining 47 professional associations are shown in
Table 1. Individual societies' details regarding the general characteristics of the associations
and their websites as well as PMAs' financial transparency are included in online
Supplementary table 1.

TABLE 1. General characteristics and financial transparency of Italian professional obstetrical and gynaecological associations extracted from their websites.

Clinical and research area	No. with website	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity*	Sponsored session/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
Obstetrics and gynaecology (n=17)	14	7	12	17	4	8	0	0	0	0	0	8
Obstetrics only (n=4)	4	1	2	4	0	0	0	0	0	0	0	0
Gynaecology only (n=26)	23	7	18	25	5	4	0	0	0	1	0	7

Data are numbers. COI = conflict of interest. CME = continuing medical education. PMA = professional medical association.

*When an association's website was not found or when the information was not indicated on website, CME activity was identified scrutinising the online programmes of the society's conferences and courses.

[†] Specific directives regulating professional obstetrical and gynaecological associations' conduct in case of private/commercial financial support.

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A total of 24 organisations were affiliated with SIGO (<http://www.sigo.it/societa-affiliate/>), and six with AOGOI (<http://www.aogoi.it/opencms/sezioniOriz/societaAffiliate/index.html>). Seventeen "generalist" associations covered both obstetrics and gynaecology (the two main ones plus 15 minor societies), four were specialised in obstetrical areas only, and 26 were specialised in gynaecological areas only. In this latter group, seven organisations dealt with infertility, four with pelvic and endoscopic surgery, four with urogynaecology, and two with, respectively, cervical pathology, contraception, and climacteric. After exclusion of the 17 "generalist" organisations, the distribution of societies' main area of interest was substantially skewed towards gynaecology (26/30; 87%).

Six societies did not appear to have a website. In 12 cases, including those in which a website could not be found, the year of establishment of the association was obtained from SIGO or AOGOI executive personnel, and from direct contact between PVe and presidents or past-presidents. In the period 1980-2014 the number of Italian obstetrical and gynaecological societies has quadrupled, starting from 12 and increasing at a mean rate of one society per year in the last 35 years (Figure 1).

The headquarters of the associations were independent in 26/41 instances, and located in the offices of a professional congress organiser and accredited CME provider in the remaining 15. Society's bylaws were published online on 32/41 (78%) of the identified websites. Forty-six associations provided CME activities. When an official society's website was not identified or when the information was not indicated on website, CME activity was verified by scrutinising the online programmes of the societies' conferences and courses. A total of 9/46 associations included sponsored sessions or symposia in their last annual meeting program. Advertisements or links to industry products were present on 12/41 societies' websites (8 in the obstetrical and gynaecological subgroup and 4 in the gynaecological only subgroup).

With regard to financial transparency, in none of the 32 bylaws posted online was the issue of COIs mentioned. No association had apparently developed a policy for interactions with industry. A total of 423 board members were identified, including the presidential trios, treasures and secretaries. Forty-eight members were included at the same time on the board of two distinct organisations, 14 members on the board of three organisations, and five on the board of four organisations. The competing interest disclosures of board members and executive staff were never posted on societies' websites.

The annual financial statement was published online in only one case and, with this exception, no information was publicly available on any other website regarding the society's source of financial support, as no data was accessible on restricted and unrestricted industry grants or individual donations, nor on industry sponsorship for the last annual meetings, courses, or other educational events.

Evaluation of transparency of SIGO and AOGOI websites according to the HONcode principles [21] identified lack of information (Supplementary table 2). In particular, neither website attributed certain health/medical information to an author; the sources of the funding of both sites were not clearly described; advertising was not always identified as such; and the sites were part of a link/banner exchange but there was no specific description about the site advertising policy. Moreover, the AOGOI website contained information from external source, but no reference to the source was made, whereas the SIGO website did not provide the last modification date and made claims relating to the benefit or performance of a specific medical treatment, commercial product or service based on the author's personal research or opinion.

Both websites provided free CME e-learning courses supported by pharmaceutical industries manufacturing drugs or commercial products used specifically in those medical

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280 areas on which courses were focused. Finally, the SIGO website included descriptions of
281 some campaigns supported by industries with direct or indirect interests in related medical
282 fields.

283 DISCUSSION

284 The results of the present survey on Italian obstetrical and gynaecological societies and
285 content analysis of their websites depict an academic scenario that warrants consideration. A
286 remarkably high number of organisations was identified, characterised by a progressive and
287 impressive increase over time, especially during the last decades. We do not have a clear
288 explanation for this phenomenon. According to the list of member societies of the
289 Federazione delle Società Medico-Scientifiche Italiane (Italian Federation of Medical-
290 Scientific Societies; FISM), which includes Italian medical and scientific societies involved in
291 medical education or research activities of national interest, this situation does not seem to be
292 generalizable to other medical specialties. [22] Of note, the gynaecological subgroup was
293 characterised by several replications, particularly in the fertility and sterility, pelvic and
294 endoscopic surgery, and urogynaecology areas. The reason for these duplications is not
295 readily understandable, because a single, large organisation would probably be more
296 efficacious in accomplishing the mission of the society, centralising resources and reducing
297 costs.

298 The observed disproportion in the distribution of subspecialty associations decidedly
299 cannot be explained by unequal distribution of the clinical content of the two main areas of
300 the addressed specialty, obstetrics and gynaecology. Thus, it could be hypothesised that
301 Italian gynaecologists were more scientifically proactive compared with their obstetrical
302 colleagues, but we could not find evidence to support this interpretation. An alternative
303 theoretical explanation of this observation is that commercial sponsorship skewed the topics

in favour of disorders from which a larger profit could be made. In this regard, gynaecology might prove a more lucrative medical area compared with obstetrics, at least in terms of markets for several costly new drugs, surgical devices, and diagnostic tools. However, we have no data to support this hypothesis.

In the USA, the first Open Payment data shows that several manufacturers of drugs or devices for gynaecologists are among the top highest spending US companies for payment to physicians, and gynaecology is second only to orthopaedic surgery in terms of the highest value of shares held by physicians.[23] Nonetheless, a direct relation between the number of existing scientific societies in a given specialty area and the degree of industry influence on its medical community appears difficult to demonstrate, and we are not alleging that any of the considered societies have engaged in any misconduct or have agreed to tailor their CME activity in accordance with a sponsor's preference.

Financial transparency of the organisations included was almost non-existent, as we were unable to retrieve relevant, publicly available information, with the exception of the annual financial statement of a single, small gynaecological association. Six associations did not appear to have a website, thus providing no publicly available information. Unfortunately, online publishing of annual budgets and data regarding financial support is not a legal requirement for Italian scientific societies, and we could not identify alternative sources of information. We could not verify if and to what extent financial relations were in place between Italian obstetrical and gynaecological associations and industry, and we are unable to reject the hypothesis that they did not exist. This also applies to commercial support of annual meetings and educational events, although in this case the obstetrical and gynaecological area would constitute an exception with respect to data on overall industry funding of Italian CME activities.[18, 19]

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We used websites as the main source of information regarding a society’s financial transparency. It could be argued that websites can be useful to identify national PMAs, but they provide no accurate specific information on COIs and commercial funding. This constitutes a limitation of our study, as we could have sent a questionnaire directly to individual medical organisations or interviewed the president and executive officers. However, the aim of our survey was to verify whether information regarding COIs of board members and industry support of Italian gynaecological societies was easily and publicly accessible, which nowadays means posted on a society’s website [17]. The concept of transparency should not imply the need for individual investigation into a society’s board members or executive staff by doctors and citizens to acquire this type of information.

Almost all the identified societies provided CME activity through conferences and courses. Lack of disclosure, in societies' websites, regarding industry support for scientific events involving CME activity (or lack of a website) is neither surprising nor unlawful, but raises ethical concerns. Some relevant information can be retrieved from the website of the Agenzia Nazionale per i Servizi Sanitari Regionali (Age.na.s), which manages the national CME program on behalf of the Italian Ministry of Health. However, although the industries sponsoring the events are listed, the financial support is expressed as a relative percentage of an overall budget that is not quantified (http://ecm.agenas.it/BancaDati/SB_Lista_Cerca_Accr.asp; accessed on March 23, 2015).

Independently of legal requirements, we believe that scientific societies should provide data on industry support of CME activity spontaneously, and should post it on their websites. This seems particularly important when the organisations delivering CME activity, which is a source of income for the provider, do not have independent headquarters, but are hosted by professional congress organisers that may receive money also from pharmaceutical companies and manufacturers of medical devices,[24, 25] or when advertisements or links to

industry products are included in their websites. However, without a formal evaluation of CME “products” (i.e., scientific quality and compliance with society mandate), no conclusions can be drawn.

Competing interests of members of the boards and executive committees of a society were also not disclosed, and this appears somewhat concerning.[1, 5, 9] In general, finding experts without competing interests is difficult, and ideally they would all be concentrated in the boards of a few major obstetrical and gynaecological societies. The multiplication of boards and committees needed as a consequence of the proliferation of smaller organisations, particularly in the gynaecological area, implies that most of their directors and executives will have COIs, simply because there are not sufficient experts without COIs to cover all the available positions. This may have implications regarding a society’s activities, including the development of practice guidelines.[26] This issue would be greater if members with COIs serve on the board of more than one association.

Taking a selected picture of a specific country is a limit of our study that impedes generalisation of the findings. However, we considered that this survey allowed us to define a general scheme to be adopted for an investigation of this type, identifying reasonable endpoints and specific information categories. We are not aware of similar surveys published in the scientific literature, and believe that this scheme could also be used to investigate the condition of PMAs in different specialties and different countries.

Rothman and co-workers described in detail the many potential threats to PMAs' integrity, identified specific COIs that may affect the organisations' activity, and formulated guidelines to prevent undue industry influence aimed at divestment from commercial support rather than management of financial competing interests.[2] In fact, the authors maintain that

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"PMAs should work toward a complete ban on pharmaceutical and medical device industry funding (\$0), except for income from journal advertising and exhibit hall fees".[2]

The Council of Medical Specialty Societies was created in USA in 1965 with the objective of providing an independent forum for cross-specialty collaboration in order to influence policy on issues with a nationwide scope, such as medical education and accreditation. The Council has issued a code for interactions with companies that includes seven core principles covering COI, financial disclosure, independent program development, and independent leadership.[27] With regard to transparency, the code states that "Societies will make their conflict of interest policies and/or forms available to their members and the public", and "Societies will disclose company support (at a minimum educational grants, corporate sponsorships, charitable contributions, and support of research grants), making this information available to their members and the public", and "Societies will disclose all financial and uncompensated relationships that key society leaders and members of the board of directors of the society' membership organization have with companies, making this information available to their members and the public". [27] Up to now, the code has been signed by 32 North-American member societies of the Council and by 17 North-American non-member societies.[28]

Examples already exist of PMAs disclosing on their website the breakdown of industry contribution toward the consolidated revenue of the society, as well as disclosure statements reported by each member of the board of directors [29], and publishing in meeting programs the company from which payment is received, the amount of payment by categories, and the specific type of relationship held with the company.[30] A policy on rigorous control over COIs has been implemented by several medical and surgical scientific societies,[19, 29-35] in some cases without detrimental consequences in terms of finances, membership, attendance at annual meetings, or leadership recruitment.[30, 32, 33]

According to Moynihan,[36] the pharmaceutical industry is currently attempting an “audacious repositioning”, that is acting as a partner with health services in the provision of patient care instead of the supplier of one element of it. Therefore, the sales and marketing departments of pharmaceutical industries and device manufacturers appear to be increasingly targeting medical societies in addition to individual physicians.[3-5, 9] Within this strategy, establishing solid ties may prove easier with smaller rather than larger associations. Moreover, the proliferation of professional organisations might also result in an overall increase in medical overuse. Therefore, it is currently unclear if the observed progressive growth in the number of gynaecological associations, together with the relative congresses and courses, does more good than harm to patients.[37] Future research should aim at verifying whether this phenomenon results exclusively in enhanced knowledge and translates into better care of women's health, or if it facilitates the dissemination of partly biased information within the scientific community.

Italian scientists should lobby for transparency of public disclosure of COIs of societies providing CME activity and on implementation of efficient societies' policies for interactions with industry. Moreover, the Ministry of Health should only grant CME credits to conferences and educational events provided that attendees are fully and publicly aware of financial connections between the scientific society and any industry involved, including quantitative information regarding funding for the meetings.[38-40] More in general, a sort of Sunshine Act [41] focussed on scientific societies and educational activity, in addition to that aimed at individual doctors, and with potential application to multiple settings and jurisdictions, could prove of great benefit for patients, practising physicians, and clinical investigators. A complete lack of transparency on the above issues nowadays appears hardly justifiable and ethically questionable. In fact, COIs of PMAs are more serious than individual ones, because, where distorted information is disseminated at educational events, the effect

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would be multiplied with potential substantial consequences on prescribing practices of many of the society's members.[3-5] Moreover, the definition of “conflict of interest” itself, in the case of PMAs, may be somewhat misleading as it has been pointed out that a medical organisation’s commitment to patients and public health is a moral duty and not a mere interest.[5]

Collaboration between PMAs and research and development departments of pharmacological companies and medical devices manufactures is very important for the advancement of medicine. This form of interaction is welcome in the interest of patients and society. On the other hand, collaboration between PMAs and company marketing departments on CME events and society annual meetings, may blur the distinction between the interest of the PMA, which is education, and that of industry, which is selling products.

Despite individual or organisational COIs, the officers of many medical associations may well be disinterested and passionate, and provide valuable activities for the benefit of society members. However, members of PMAs are not the end users of drugs and devices marketed by industry; rather they are the gatekeepers entrusted to make evidence-based recommendations to the real end user, that is, the patient.[9] When the citizens eventually have to pay the bill, either directly or indirectly through national health systems, the conduct of PMAs may not be only based on the presumed good faith of their officers, but should contemplate the provision of publicly available and easily accessible data on financial competing interests. Transparency and disclosures do not eliminate COIs,[42, 43] but may enable doctors and lay people to contextualise the scientific information disseminated in various ways by medical organisations, putting it in the right perspective.

CONTRIBUTION TO AUTHORSHIP

PVe, PVi and ES conceived and planned the article. All the authors searched the web to identify Italian obstetrical and gynaecological societies. PVe and MPF scrutinised the societies' websites, retrieved and tabulated data. All the authors interpreted the data. PVe drafted the manuscript and all the authors revised it. All the authors approved the final version of the manuscript.

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COMPETING INTEREST STATEMENT

All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf and declare: no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years; no other relationships or activities that could appear to have influenced the submitted work; PVe is associate editor of Human Reproduction Update and past president of the World Endometriosis Society; PVi is associate editor of Human Reproduction; ES is deputy editor of Human Reproduction.

DATA SHARING STATEMENT

There are no data in addition to those presented in this report. No statistical testing is reported.

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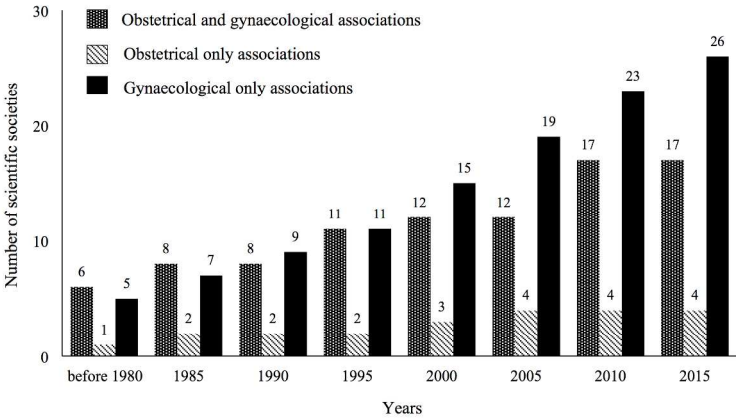
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569 FIGURE LEGEND

570 Variation in the number of Italian obstetrical and gynaecological societies over time. The
571 number on top of each column is the number of societies.

For peer review only



209x297mm (300 x 300 DPI)

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites.*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
AGEO Associazione Ginecologi Extra Ospedalieri (Association of off hospital gynaecologists) http://www.ageo-federazione.it	1996	Yes	Yes	Yes	No	No	No	No	No	No	No	No
AGICO Associazione Ginecologi Consultoriali (Association of family clinic gynaecologists) http://www.agico.it/Agico-2007/home.asp	1985	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes
AGIF Associazione Ginecologi Italiani in Formazione (Association of in-training Italian gynaecologists) http://www.giovaniginecologi.org/home/	2009	Yes	Yes	Yes	No	No	No	No	No	No	No	Yes
AGITE Associazione Ginecologi Territoriali (Association of territorial gynaecologists) http://www.agite.eu/	2007	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes
AGUI Associazione Ginecologi Universitari Italiani (Association of Italian academic gynaecologists) http://www.aguionline.it/	1992	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
AIGE Associazione Italiana di Ginecologia Endocrinologica (Italian association of gynaecological endocrinology) http://www.ginendo.it/	2003	No	No	Yes	No	No	N.A.	No	No	No	No	Yes
AIPE Associazione Italiana pre-eclampsia (Italian Branch of the International Society for the Study of Hypertension in Pregnancy) http://www.preeclampsia.it/	2005	No	No	Yes	No	No	N.A.	No	No	No	No	No
AIUG Associazione Italiana di Urologia Ginecologica e del Pavimento Pelvico (Italian association of gynaecologic urology and of pelvic floor) http://www.aiug.eu/aiug.asp	1989	No	No	Yes	Yes	Yes	N.A.	No	No	No	No	No
AOGOI Associazione Ostetrici Ginecologi Ospedalieri Italiani (Association of hospital Italian gynaecologists and obstetricians) http://www.aogoi.it/	1948	No	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
ATGO Associazione Triveneta di Ginecologia e Ostetricia (North-eastern association of gynaecology and obstetrics) http://www.atgo.it/	1934	No	No	Yes	No	Yes	N.A.	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
CECOS Centro Studi e Conservazione Ovociti e Sperma Umani (Center for the study and preservation of human oocytes and sperm) http://www.cecos.it/	1984	No	Yes	Yes	No	Yes	No	No	No	No	No	No
FIOG Federazione Italiana di Ostetricia e Ginecologia (Italian federation of obstetrics and gynaecology) http://www.fiogonline.it/	2008	Yes	Yes	Yes	No	No	No	No	No	No	No	No
GILT Ginecologi Liguri del Territorio (Territorial gynaecologists of Liguria)	1994	No website found		Yes [‡]	No	No website found						No
GISCI Gruppo Italiano Screening del Cervicocarcinoma (Cervical cancer screening Italian group) http://www.gisci.it/	1996	No	Yes	Yes	Yes	No	No	No	No	Yes	No	Yes
GLUP Gruppo di lavoro in uroginecologia pavimento pelvico (Working group in pelvic floor urogynaecology) http://dev-test.glup.it/	2010	Yes	Yes	Yes	No	No	No	No	No	No	No	No
GREG Gruppo Romano di Endoscopia Ginecologica (Roman group of gynaecological endoscopy)	1995	No website found		Yes [‡]	No	No website found						No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
LAMM Società Laziale Abruzzese Marchigiana Molisana di Ostetricia e Ginecologia (Lazio, Abruzzo, Marche, and Molise society of obstetrics and gynaecology)	1971	No website found		Yes‡	No	No website found						No
PRO-FERT Società Italiana di Conservazione della Fertilità (Italian society for the preservation of fertility) http://profert.org/	2007	No	Yes	Yes	No	No	No	No	No	No	No	No
SCCL Società Campano Calabro Lucana di Ostetricia e Ginecologia (Campania, Calabria, and Lucania society of obstetrics and gynaecology)	1947	No website found		Yes‡	No	No website found						No
SEGi Società Italiana di Endoscopia Ginecologica (Italian society of gynaecological endoscopy) http://www.segionline.it/	2000	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No
SIC Società Italiana Contraccezione (Italian society for contraception) http://www.sicontraccezione.it/	2004	Yes	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SICHIG Società Italiana di Chirurgia Ginecologica (Italian society of gynaecological surgery) http://www.sichig.it/	1989	No	Yes	Yes	No	No	No	No	No	No	No	No
SICMIG Scuola Italiana di Chirurgia Mini Invasiva Ginecologica (Italian school of minimally invasive gynaecological surgery) http://www.sicmig.org/	2005	Yes	Yes	Yes	No	No	No	No	No	No	No	No
SICPCV Società Italiana di Colposcopia e Patologia Cervico Vaginale (Italian society of colposcopy and cervical and vaginal pathology) http://www.colposcopiaitaliana.it/	1980	No	Yes	Yes	No	No	No	No	No	No	No	No
SIDIP Società Italiana di Diagnosi Prenatale e Medicina Materno Fetale (Italian society of prenatal diagnosis and feto-maternal medicine) http://www.ilfeto.it/site/	1998	No	Yes	Yes	No	No	No	No	No	No	No	No
SIDR Società Italiana della Riproduzione (Italian society of reproduction) http://www.sidr.it/cms/view.html	1999	Yes	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIEOG Società Italiana di Ecografia Ostetrica e Ginecologica e Metodologie Biofisiche (Italian society of obstetrical and gynaecological ultrasonography and bio-physical methodologies) http://www.sieog.it/	1984	No	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
SIEPAM Società Italiana Endometriosi e Patologia Mestruale (Italian society of endometriosis and menstrual disorders) http://www.siepam.it/	2014	Yes	No	Yes	No	No	N.A.	No	No	No	No	Yes
SIERR Società Italiana di Embriologia, Riproduzione e Ricerca (Italian society of embryology, reproduction and research) http://www.sierr.it/	1998	No	Yes	Yes	No	No	No	No	No	No	No	Yes
SIFES E MR Società Italiana di Fertilità e Sterilità e Medicina della Riproduzione (Italian society of fertility, sterility and reproductive medicine) http://sifes.it/	1965	No	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COI of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIFIOG Società Italiana di Fitoterapia e Integratori in Ostetricia e Ginecologia (Italian society of phytoterapeutics and supplements in obstetrics and gynaecology) http://www.sifiog.it/	2008	Yes	No	Yes	No	No	N.A.	No	No	No	No	No
SIFR Società Italiana di Fisiopatologia della Riproduzione (Italian society for pathophysiology of reproduction)	1982	No website found		Yes [‡]	Yes	No website found						No
SIGIA Società Italiana di Ginecologia dell'Infanzia e dell'Adolescenza (Italian society of childhood and adolescent gynaecology) http://www.sigia.it/	1978	No	Yes	Yes	No	No	No	No	No	No	No	No
SIGITE Società Italiana di Ginecologia della Terza Età (Italian society for third age gynaecology) http://www.sigite.it/drupal/index.php	1991	No	Yes	Yes	No	No	No	No	No	No	No	Yes

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIGO Società Italiana di Ginecologia e Ostetricia (Italian society of gynaecology and obstetrics) http://www.sigo.it/home/	1892	No	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
SIM Società Italiana della Menopausa (Italian society of menopause) http://www.simenopausa.it/	2011	Yes	No	Yes	No	No	N.A.	No	No	No	No	No
SIMP Società Italiana di Medicina Perinatale (Italian society of perinatal medicine) http://www.simponline.it/site/home.asp	1984	Yes	Yes	Yes	No	No	No	No	No	No	No	No
SIOG Società Italiana di Oncologia Ginecologica (Italian society of gynaecological oncology) http://www.siog.it	1977	No	Yes	Yes	No	Yes	No	No	No	No	No	Yes
SIOS Società Italiana Ospedaliera Sterilità (Italian hospital society for sterility) http://www.siosteril.it/	2003	No	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIPGO Società Italiana per la Psicosomatica in Ginecologia e Ostetricia (Italian society for psychosomatics in gynaecology and obstetrics) http://www.sipgo.org/	1993	No	Yes	Yes	No	No	No	No	No	No	No	No
SIPO Società Italiana Policistosi Ovarica (Italian society of polycystic ovary syndrome)	2012	No website found		Yes [‡]	No	No website found						No
SIPPO Società Italiana di Psicoprofilassi Ostetrica (Italian society for obstetrical psycho-prophylaxis) http://www.sippo.eu/	1966	No	No	Yes [‡]	No	No	N.A.	No	No	No	No	No
SIPUF Società Italiana di Pelvi Perineologia e Urologia Femminile e Funzionale (Italian society of pelvi-perineology and female and functional urology) http://www.sipuf.net/sipuf/societa-italiana-di-pelvi-perineologia-e-urologia-femminile-e-funzionale.do	2007	Yes	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIRONG Società Italiana per la Ricerca Ostetrico-Neonatale-Ginecologica (Italian society for the obstetrical, neonatal, and gynaecological research) http://www.sirong.it/	2008	No	Yes	Yes	No	Yes	No	No	No	No	No	Yes
SIUD Società italiana di urodinamica (Italian society of urodynamics) http://www.siud.it/	1977	No	Yes	Yes	Yes	No	No	No	No	No	No	Yes
SLOG Società Lombarda di Ostetricia e Ginecologia (Lumbardy society of obstetrics and gynaecology) http://www.slog.org/	1950	No	Yes	Yes	No	No	No	No	No	No	No	No
SMIC Società Medica Italiana per la Contraccezione (Italian medical society for contraception) http://www.smicontraccezione.it/	2006	No	No	No	N.A.	No	N.A.	No	No	No	No	N.A.

*In 12 cases, including those in which a website was not found, the year of establishment of the association/society was obtained from the two major national professional associations (i.e., Società Italiana di Ginecologia and Ostetricia and Associazione Ostetrici e Ginecologi Ospedalieri Italiani), and presidents or past presidents of the societies.

† Specific directives regulating professional obstetrical and gynaecological associations' conduct in case of private financial support.

‡ When an association's website was not found or when the information was not indicated on website, CME activity was identified by scrutinising the online programmes of the society's conferences and courses.

COI = conflict of interest. CME = continuing medical education. PMA = professional medical association. N.A. = not applicable.

Supplementary table 2. Evaluation of the Società Italiana di Ginecologia e Ostetricia (SIGO) and the Associazione Ostetrici e Ginecologi Ospedalieri Italiani (AOGOI) websites according to the Health on the Net Foundation Code of Conduct (HONcode) principles.

Principles of HONcode Site Evaluation Form	SIGO	AOGOI
Principle 1. Information must be authoritative		
1. The site provides general information about the organization or individual responsible for its operation and content, and details about the editor or principal author are given with his/her credentials	Yes, an author's or editor's details with credentials are given	Yes, an author's or editor's details with credentials are given
2. The site provides medical/health information or advice	Some health/medical information is not attributed to an author	Some health/medical information is not attributed to an author
Principle 2. Complementarity/Mission/Assistance		
3. A statement declaring that information provided on the site is meant to complement and not replace any advice or information from a health professional is clearly provided	Yes	Yes
4. A statement describing the intended mission of the site is provided on the site	Yes	Yes
5. The site clearly mentions the intended audience of the site (general public, health professionals, students...)	Yes	Yes
Principle 3. Privacy - Confidentiality		
6. A Privacy/Confidentiality Policy regarding e-mail addresses, personal, non-personal and medical information is displayed on my website	Yes	Yes
7. Do my site and its mirrors respect the legal requirements, including those concerning medical and personal information privacy, that apply in the country and state of their location?	Yes	Yes
Principle 4. Information must be documented: Referenced and dated		
8. Is the last modification date provided for the site?	No	Yes, for all the pages of the site

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Supplementary table 2. Evaluation of the Società Italiana di Ginecologia e Ostetricia (SIGO) and the Associazione Ostetrici e Ginecologi Ospedalieri Italiani (AOGOI) websites according to the Health on the Net Foundation Code of Conduct (HONcode) principles. Continued.

9. Does the site contain information from external sources?	Yes, a bibliographic reference to the source data is given	Yes, but no reference to the source is made
Principle 5. Justification of claims		
10. Does the site make claims relating to the benefit or performance of a specific medical treatment, commercial product or service?	Yes, the claims are based on the author's personal research or opinions	Yes, all claims are supported by clear references to scientific research results and/or published articles
Principle 6. Website contact details		
11. A valid email address for the webmaster or a link to a valid contact form is easily accessible throughout the site?	Yes	Yes
Principle 7. Disclosure of funding sources		
12. Is the source of the funding of my site clearly described?	No	No
Principle 8. Advertising policy		
13. The site displays advertising that, is a source of income	Advertising is not identified as such	Advertising is not identified as such
14. The site is part of a link/banner exchange	Yes, but there is no specific description about the site advertising policy	Yes, but there is no specific description about the site advertising policy
15. The site does not display advertising	There is no statement displayed	There is no statement displayed

BMJ Open

The proliferation of gynaecological scientific societies and their financial transparency: an Italian survey

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1 THE PROLIFERATION OF GYNAECOLOGICAL SCIENTIFIC SOCIETIES AND THEIR
2 FINANCIAL TRANSPARENCY: AN ITALIAN SURVEY

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20 Key words: scientific societies, obstetrics, gynaecology, competing interests.

21 Word count: ???

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23 ABSTRACT

24 **Objectives:** To determine the number of Italian obstetrical and gynaecological societies, and
25 to ascertain their financial transparency.

26 **Design:** Internet-based national survey and website content analysis.

27 **Participants:** Currently active, not privately owned, non-religious, apolitical, obstetrical and
28 gynaecological associations.

29 **Methods:** From October 2014 to June 2015, scientific societies were identified using
30 combinations of search terms, and examining the website of the two main Italian obstetrical
31 and gynaecological organisations. Individual societies' websites were scrutinised by two
32 independent investigators.

33 **Primary and secondary outcome measures:** Number of Italian obstetrical and
34 gynaecological associations and its variation over time; 12 information categories defining the
35 general characteristics of the societies and their websites, and the financial transparency of the
36 associations.

37 **Results:** The initial web search yielded 56 professional obstetrical and gynaecological
38 associations but nine were excluded for various reasons. Of the remaining 47 professional
39 associations, 17 covered both obstetrics and gynaecology, four were specialised in obstetrics,
40 26 in gynaecology and 46 provided CME activities. The number of societies has quadrupled
41 in the last 35 years, increasing at a mean rate of one additional society per year. The
42 headquarters of the associations were located in the offices of a professional congress
43 organiser in 15 instances, and advertisements or links to industry products were present in 12
44 societies' websites. Bylaws were accessible in 32 websites. No information was publicly

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45 available regarding competing interests, financial statements, and quantitative external
46 funding.

47 **Conclusions:** The number of obstetrical and gynaecological societies is remarkably high in
48 Italy, particularly in the gynaecological area. This may result in waste of resources. Despite
49 CME activity provision, transparency of societies regarding financial issues and competing
50 interests was almost non-existent. This may be associated with the risk of blurring the
51 distinction between education and marketing. Policies addressing the interactions between
52 medical associations and industry are available and should be implemented.

STRENGTHS AND LIMITATIONS OF THE STUDY

- Different search strategies were adopted to identify all currently active Italian obstetrical and gynaecological scientific societies, i.e., Internet, executive personnel of the two main national organisations, and direct contacts with some presidents and past-presidents.
- Two independent investigators retrieved information, abstracted data on standardised forms and conducted a website content analysis on 12 items regarding the general characteristics of the medical associations and their websites, as well as societies' financial transparency.
- The data presented describe a selected picture of a specific medical specialty in Italy. The findings cannot be generalised to other medical specialties and other countries.

65 ETHICAL APPROVAL STATEMENT

66 The Ethic Committee’s approval was not required for this survey.

For peer review only

67 INTRODUCTION

68 A core mission of medical societies is dissemination of scientific information.[1, 2] They
69 foster research in distinct fields of medicine, promote medical education, and develop clinical
70 guidelines. Authoritative medical associations are also influential in modulating practice,
71 counselling administrators, advising politicians regarding public healthcare programmes, and
72 regulating professional conduct. Thus, the social role of these organisations entails
73 exceedingly important clinical and ethical implications.[1-4]

74 However, some authors maintain that economic aspects are progressively eroding the
75 moral foundations of medical associations, increasing the tension between self-interest and
76 ethical principles. [1] In particular, a progressive imbalance has been observed in funding
77 derived from membership dues and grants and contracts awarded by government or charitable
78 foundations, in favour of support from for-profit organisations [1, 5-7]. This situation may
79 generate a conflict of interest (COI), which has been defined as “a set of circumstances that
80 creates a risk that professional judgment or actions regarding a primary interest will be unduly
81 influenced by a secondary interest”. [8] The primary interest of a scientific society is to
82 promote the highest quality of care also through the education of its members. [9] The
83 secondary interest is, in this case, the financial well-being of the society together with the
84 financial profit of some commercial entities. A COI may occur not only if a professional
85 medical organisation (PMA) receives money from manufacturers of drugs or devices used in
86 the same medical area of interest as the society, but also when individual officers of the
87 organisation have personal financial ties to industries that could influence their actions and
88 decisions within the PMA. Of note, COI is a condition, not a behaviour. In other words, when
89 a COI exists, no actual unethical conduct has necessarily arisen. [5] However, although COI
90 and bias are not synonymous, the former is a demonstrated risk factor for the latter.[10]

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91 Two different approaches have been suggested to deal with COIs of PMAs, i.e., a
92 divestment strategy (progressively discontinuing commercial support), and a management
93 strategy (disclosing COIs and adopting rules to limit their potentially pernicious effects).[5, 9]
94 As the operating budget of many PMAs is substantially based on industry funding, the latter
95 policy has generally been preferred, purportedly to ensure stability in organisation functioning
96 and avoid curtailments in services to members. [1, 5-7, 11] To be efficient, any strategy to
97 “manage” COIs about interactions with industry, should be based on thorough financial
98 transparency, particularly, but not exclusively, regarding commercial support of annual
99 meetings. In fact, most PMAs base their financial sustainability on revenues from periodic
100 congresses, as in these occasions industry generally purchases exhibit hall space, sponsors
101 conference sessions or satellite symposia, pays the registration fee for a variable number of
102 attendees, and buys advertising opportunities.[2, 9, 12, 13].

103 Complicating further the above scenario, the past decades have witnessed a tendency
104 toward proliferation of medical societies focussed on subspecialty areas or even single
105 diseases, paralleling the general trend of modern medicine in the direction of over-
106 specialisation. [14] The intrinsic benefit of creating small and subspecialty associations is the
107 possibility of increasing knowledge on specific disorders. However, compared with major
108 national and international organisations, small societies may have less impact regarding
109 public advocacy, information of healthcare decision makers, and definition of public health
110 system strategies. Moreover, small societies generally have restricted financial resources, thus
111 their possibility to fund research seems limited. In this regard, the proliferation of
112 subspecialty medical associations could also be viewed as a potential waste of precious
113 resources that could be invested more efficiently in the interest of patients.

114 In addition, the quality of the information disseminated by scientific organisations
115 should be scrutinised with care. Intellectual independence is essential, especially when

116 providing continuing medical education (CME) activity,[10, 15-17] but fragmentation and
117 subspecialisation may expose medical societies to increased financial vulnerability and,
118 hypothetically, this could result in an increase in the risk of undue influence of
119 pharmaceutical, biotechnology, and device industries. Noteworthy, the percentage of the
120 overall national funding for CME activities provided by industry is particularly high in Italy,
121 with reported figures varying from 60%[18] to almost 100%[19] of the total expenditure.

122 The phenomenon of proliferation of professional organisations appears to be
123 particularly intense in the gynaecological field, probably owing to the multitude of issues
124 regarding women's health. Therefore, we decided to conduct a survey in order to examine the
125 condition of obstetrical and gynaecological societies in Italy. The primary objectives were to
126 determine the overall number of associations and to verify whether a trend exists towards an
127 increase in the number of subspecialty organisations over time. Secondary aims were to
128 ascertain the societies' level of transparency regarding general competing interests and
129 funding from industry, and to evaluate if a relation exists between the provision of CME
130 activity and the degree of financial transparency.

131 METHODS

132 This survey was conducted by retrieving and analysing information from the Internet. As
133 publicly available data were used, the present study was exempt from the Ethics Committee's
134 approval. The study was restricted to professional organisations active during 2014 in Italy.
135 Websites were identified using 'Google', consistently ranked as the most popular search
136 engine (<http://www.google.com>). [20] The following Italian search terms and phrases were
137 used: "Italian obstetrical and gynaecological societies", "obstetrical and gynaecological
138 societies AND Italy", "Italian obstetrical and gynaecological associations", "obstetrical and
139 gynaecological associations AND Italy", "Italian obstetrical and gynaecological federations",

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140 “obstetrical and gynaecological federations AND Italy”, “Italian obstetrical and
141 gynaecological organisations”, “obstetrical and gynaecological organisations AND Italy”. In
142 addition, the websites of the two major national obstetrical and gynaecological societies
143 (Società Italiana di Ginecologia e Ostetricia, SIGO; Associazione Ostetrici Ginecologi
144 Ospedalieri Italiani, AOGOI) were examined with the objective of identifying all the
145 subspecialty organisations in the field affiliated to SIGO and AOGOI. All authors
146 independently conducted the initial search from October 31 to November 7, 2014. After
147 completion of the list of associations, these were categorised, based on their name, into
148 combined obstetrical and gynaecological, obstetrical only, and gynaecological only
149 organisations.

150 Individual societies’ websites were then independently scrutinised from November 8
151 to December 12, 2014, and from June 15 to 19, 2015, by two authors (PVe and MPF), in
152 order to verify the correctness of the initial categorisation, and to ascertain whether the
153 association was public (i.e., not privately owned by single individuals), and with a defined
154 mission and a regular board, including a president, a treasurer, a secretary, and an executive
155 committee. Individual or privately owned organisations, those not specifically aimed at
156 physicians, and those with a religious or political profile were excluded. Moreover,
157 information was collected on standardised abstraction forms on 12 items defining two
158 domains, i.e., i) the general characteristics of the society and its website (year of
159 establishment; whether the headquarters were independent or located in the offices of a
160 professional congress organiser and accredited CME provider; online availability of society's
161 bylaws; provision of CME activity; inclusion of sponsored sessions or symposia in the
162 society's last annual meeting program; presence on society's website of industry advertisement
163 or links to industries' websites), and ii) the financial transparency of the association
164 (discussion of financial COIs in society's bylaws; adoption of a policy for interactions with

industry; availability of financial COI disclosures of presidential trio (president, past president, and president-elect), board members and executive staff; online availability of annual financial statement; disclosure of restricted and unrestricted industry grants and individual donations; indication of industry sponsorship in the last annual meeting program based on informative printed text in addition to mere logo inclusion).

In cases where the information on a PMA's year of establishment was missing, the executive staff of the above two major national obstetrical and gynaecological societies were consulted by email and telephone. Moreover, PVe directly contacted the presidents and selected board members of some associations in order to obtain missing data from original documents. A final extraction form was compiled from the two separate evaluation forms, with correction or resolution of any discrepancies between abstractors by consensus reached after discussion or further joint re-examination of selected societies' websites.

In addition, two authors independently used the Health on the Net Foundation Code of Conduct [21] for medical websites, with the objective of examining the degree of transparency of the healthcare information provided on the websites of the two major national obstetrical and gynaecological associations, SIGO and AOGOI. The HONcode is an instrument developed to assess the intent of a website to publish accurate information, and it includes items on transparency, financial disclosure, and advertising policy [21].

RESULTS

The initial web search yielded 56 professional obstetrical and gynaecological associations, but two were immediately excluded because they were known to be privately owned (Società Italiana Studi di Medicina della Riproduzione, SISMeR) or individually managed (Fondazione Graziottin per la Cura del Dolore nella Donna). Examination of societies' websites resulted in the exclusion of three organisations with defined socio-political or

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religious characteristics (Associazione Italiana Ginecologi Ostetrici Cattolici, AICOG;
Società Italiana Procreazione Responsabile, SIPRe; Libera Associazione Italiana Ginecologi
per l'Applicazione della Legge 194/78, LAIGA). One association (Confederazione Italiana
Ginecologi Ospedalieri, CIGO) was excluded because its activities were unclear and not
typical of a regular scientific society (e.g., organisation of conferences and development of
clinical recommendations). Another association was apparently no longer currently active
(Società Italiana di Endoscopia e Laserterapia in Ginecologia, SIELG). Only one reviewer
excluded two other organisations. Joint re-examination of the two websites demonstrated that
the activity of one association (Fondazione Confalonieri Ragonese) was limited to drafting
clinical practice recommendations on behalf of AOGOI, whereas the activity of the other one
(Associazione Italiana di Ostetricia, AIO) was aimed mainly at midwives rather than
physicians. A shared decision was taken to exclude the latter two organisations.

Summary characteristics of the remaining 47 professional associations are shown in
Table 1. Individual societies' details regarding the general characteristics of the associations
and their websites as well as PMAs' financial transparency are included in online
Supplementary table 1.

TABLE 1. General characteristics and financial transparency of Italian professional obstetrical and gynaecological associations extracted from their websites.

Clinical and research area	No. with website	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity*	Sponsored session/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
Obstetrics and gynaecology (n=17)	14	7	12	17	4	8	0	0	0	0	0	8
Obstetrics only (n=4)	4	1	2	4	0	0	0	0	0	0	0	0
Gynaecology only (n=26)	23	7	18	25	5	4	0	0	0	1	0	7

Data are numbers. COI = conflict of interest. CME = continuing medical education. PMA = professional medical association.

*When an association's website was not found or when the information was not indicated on website, CME activity was identified scrutinising the online programmes of the society's conferences and courses.

[†] Specific directives regulating professional obstetrical and gynaecological associations' conduct in case of private/commercial financial support.

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A total of 24 organisations were affiliated with SIGO (<http://www.sigo.it/societa-affiliate/>), and six with AOGOI (<http://www.aogoi.it/opencms/sezioniOriz/societaAffiliate/index.html>). Seventeen "generalist" associations covered both obstetrics and gynaecology (the two main ones plus 15 minor societies), four were specialised in obstetrical areas only, and 26 were specialised in gynaecological areas only. In this latter group, seven organisations dealt with infertility, four with pelvic and endoscopic surgery, four with urogynaecology, and two with, respectively, cervical pathology, contraception, and climacteric. After exclusion of the 17 "generalist" organisations, the distribution of societies' main area of interest was substantially skewed towards gynaecology (26/30; 87%).

Six societies did not appear to have a website. In 12 cases, including those in which a website could not be found, the year of establishment of the association was obtained from SIGO or AOGOI executive personnel, and from direct contact between PVe and presidents or past-presidents. In the period 1980-2014 the number of Italian obstetrical and gynaecological societies has quadrupled, starting from 12 and increasing at a mean rate of one society per year in the last 35 years (Figure 1).

The headquarters of the associations were independent in 26/41 instances, and located in the offices of a professional congress organiser and accredited CME provider in the remaining 15. Society's bylaws were published online on 32/41 (78%) of the identified websites. Forty-six associations organised conferences and provided CME activities. When an official society's website was not identified or when the information was not indicated on website, CME activity was verified by scrutinising the online programmes of the societies' conferences and courses. A total of 9/46 associations included sponsored sessions or symposia in their last annual meeting program. Advertisements or links to industry products were present on 12/41 societies' websites (8 in the obstetrical and gynaecological subgroup and 4 in the gynaecological only subgroup).

With regard to financial transparency, in none of the 32 developed bylaws was the issue of COIs mentioned. No association had apparently developed a policy for interactions with industry. A total of 423 board members were identified, including the presidential trios, treasures and secretaries. Forty-eight members were included at the same time on the board of two distinct organisations, 14 members on the board of three organisations, and five on the board of four organisations. The competing interest disclosures of board members and executive staff were never posted on societies' websites.

The annual financial statement was published online in only one case and, with this exception, no information was publicly available on any other website regarding the society's source of financial support, as no data was accessible on restricted and unrestricted industry grants or individual donations, nor on industry sponsorship for the last annual meetings, courses, or other educational events.

Evaluation of transparency of SIGO and AGOI websites according to the HONcode principles [21] identified lack of information (Supplementary table 2). In particular, neither website attributed certain health/medical information to an author; the sources of the funding of both sites were not clearly described; advertising was not always identified as such; and the sites were part of a link/banner exchange but there was no specific description about the site advertising policy. Moreover, the SIGO website did not provide the last modification date and made claims relating to the benefit or performance of a specific medical treatment, commercial product or service based on the author's personal research or opinion.

Both websites provided free CME e-learning courses supported by pharmaceutical industries manufacturing drugs or commercial products used specifically in those medical areas on which courses were focused. Finally, the SIGO website included descriptions of

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280 some campaigns supported by industries with direct or indirect interests in related medical
281 fields.

282 DISCUSSION

283 The results of the present survey on Italian obstetrical and gynaecological societies and
284 content analysis of their websites depict an academic scenario that warrants consideration. A
285 remarkably high number of organisations was identified, characterised by a progressive and
286 impressive increase over time, especially during the last decades. We do not have a clear
287 explanation for this phenomenon. According to the list of member societies of the
288 Federazione delle Società Medico-Scientifiche Italiane (Italian Federation of Medical-
289 Scientific Societies; FISM), which includes Italian medical and scientific societies involved in
290 medical education or research activities of national interest, this situation does not seem to be
291 generalizable to other medical specialties. [22] Of note, the gynaecological subgroup was
292 characterised by several replications, particularly in the fertility and sterility, pelvic and
293 endoscopic surgery, and urogynaecology areas. The reason for these duplications is not
294 readily understandable, because a single, large organisation would probably be more
295 efficacious in accomplishing the mission of the society, centralising resources and reducing
296 costs.

297 The observed disproportion in the distribution of subspecialty associations decidedly
298 cannot be explained by unequal distribution of the clinical content of the two main areas of
299 the addressed specialty, obstetrics and gynaecology. Thus, it could be hypothesised that
300 Italian gynaecologists were more scientifically proactive compared with their obstetrical
301 colleagues, but we could not find evidence to support this interpretation. An alternative
302 theoretical explanation of this observation is that commercial sponsorship skewed the topics
303 in favour of disorders from which a larger profit could be made. In this regard, gynaecology

304 might prove a more lucrative medical area compared with obstetrics, at least in terms of
305 markets for several costly new drugs, surgical devices, and diagnostic tools. However, we
306 have no data to support this hypothesis.

307 In the USA, the first Open Payment data shows that several manufacturers of drugs or
308 devices for gynaecologists are among the top highest spending US companies for payment to
309 physicians, and gynaecology is second only to orthopaedic surgery in terms of the highest
310 value of shares held by physicians.[23] Nonetheless, a direct relation between the number of
311 existing scientific societies in a given specialty area and the degree of industry influence on
312 its medical community appears difficult to demonstrate, and we are not alleging that any of
313 the considered societies have engaged in any misconduct or have agreed to tailor their CME
314 activity in accordance with a sponsor's preference.

315 Financial transparency of the organisations included was almost non-existent, as we
316 were unable to retrieve relevant, publicly available information, with the exception of the
317 annual financial statement of a single, small gynaecological association. Six associations did
318 not appear to have a website, thus providing no publicly available information. Unfortunately,
319 online publishing of annual budgets and data regarding financial support is not a legal
320 requirement for Italian scientific societies, and we could not identify alternative sources of
321 information. We could not verify if and to what extent financial relations were in place
322 between Italian obstetrical and gynaecological associations and industry, and we are unable to
323 reject the hypothesis that they did not exist. This also applies to commercial support of annual
324 meetings and educational events, although in this case the obstetrical and gynaecological area
325 would constitute an exception with respect to data on overall industry funding of Italian CME
326 activities.[18, 19]

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We used websites as the main source of information regarding a society’s financial transparency. It could be argued that websites can be useful to identify national PMAs, but they provide no accurate specific information on COIs and commercial funding. This constitutes a limitation of our study, as we could have sent a questionnaire directly to individual medical organisations or interviewed the president and executive officers. However, the aim of our survey was to verify whether information regarding COIs of board members and industry support of Italian gynaecological societies was easily and publicly accessible, which nowadays means posted on a society’s website [17]. The concept of transparency should not imply the need for individual investigation into a society’s board members or executive staff by doctors and citizens to acquire this type of information.

Almost all the identified societies provided CME activity through conferences and courses. Lack of disclosure, in societies' websites, regarding industry support for scientific events involving CME activity (or lack of a website) is neither surprising nor unlawful, but raises ethical concerns. Some relevant information can be retrieved from the website of the Agenzia Nazionale per i Servizi Sanitari Regionali (Age.na.s), which manages the national CME program on behalf of the Italian Ministry of Health. However, although the industries sponsoring the events are listed, the financial support is expressed as a relative percentage of an overall budget that is not quantified (http://ecm.agenas.it/BancaDati/SB_Lista_Cerca_Accr.asp; accessed on March 23, 2015).

Independently of legal requirements, we believe that scientific societies should provide data on industry support of CME activity spontaneously, and should post it on their websites. This seems particularly important when the organisations delivering CME activity, which is a source of income for the provider, do not have independent headquarters, but are hosted by professional congress organisers that may receive money also from pharmaceutical companies and manufacturers of medical devices,[24, 25] or when advertisements or links to

industry products are included in their websites. However, without a formal evaluation of CME “products” (i.e., scientific quality and compliance with society mandate), no conclusions can be drawn.

Competing interests of members of the boards and executive committees of a society were also not disclosed, and this appears somewhat concerning.[1, 5, 9] In general, finding experts without competing interests is difficult, and ideally they would all be concentrated in the boards of a few major obstetrical and gynaecological societies. The multiplication of boards and committees needed as a consequence of the proliferation of smaller organisations, particularly in the gynaecological area, implies that most of their directors and executives will have COIs, simply because there are not sufficient experts without COIs to cover all the available positions. This may have implications regarding a society’s activities, including the development of practice guidelines.[26] This issue would be greater if members with COIs serve on the board of more than one association.

Taking a selected picture of a specific country is a limit of our study that impedes generalisation of the findings. However, we considered that this survey allowed us to define a general scheme to be adopted for an investigation of this type, identifying reasonable endpoints and specific information categories. We are not aware of similar surveys published in the scientific literature, and believe that this scheme could also be used to investigate the condition of PMAs in different specialties and different countries.

Rothman and co-workers described in detail the many potential threats to PMAs' integrity, identified specific COIs that may affect the organisations' activity, and formulated guidelines to prevent undue industry influence aimed at divestment from commercial support rather than management of financial competing interests.[2] In fact, the authors maintain that

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"PMAs should work toward a complete ban on pharmaceutical and medical device industry funding (\$0), except for income from journal advertising and exhibit hall fees".[2]

The Council of Medical Specialty Societies was created in USA in 1965 with the objective of providing an independent forum for cross-specialty collaboration in order to influence policy on issues with a nationwide scope, such as medical education and accreditation. The Council has issued a code for interactions with companies that includes seven core principles covering COI, financial disclosure, independent program development, and independent leadership.[27] With regard to transparency, the code states that “Societies will make their conflict of interest policies and/or forms available to their members and the public”, and “Societies will disclose company support (at a minimum educational grants, corporate sponsorships, charitable contributions, and support of research grants), making this information available to their members and the public”, and “Societies will disclose all financial and uncompensated relationships that key society leaders and members of the board of directors of the society’ membership organization have with companies, making this information available to their members and the public”. [27] Up to now, the code has been signed by 32 North-American member societies of the Council and by 17 North-American non-member societies.[28]

Examples already exist of PMAs disclosing on their website the breakdown of industry contribution toward the consolidated revenue of the society, as well as disclosure statements reported by each member of the board of directors [29], and publishing in meeting programs the company from which payment is received, the amount of payment by categories, and the specific type of relationship held with the company.[30] A policy on rigorous control over COIs has been implemented by several medical and surgical scientific societies,[19, 29-35] in some cases without detrimental consequences in terms of finances, membership, attendance at annual meetings, or leadership recruitment.[30, 32, 33]

According to Moynihan,[36] the pharmaceutical industry is currently attempting an “audacious repositioning”, that is acting as a partner with health services in the provision of patient care instead of the supplier of one element of it. Therefore, the sales and marketing departments of pharmaceutical industries and device manufacturers appear to be increasingly targeting medical societies in addition to individual physicians.[3-5, 9] Within this strategy, establishing solid ties may prove easier with smaller rather than larger associations. Moreover, the proliferation of professional organisations might also result in an overall increase in medical overuse. Therefore, it is currently unclear if the observed progressive growth in the number of gynaecological associations, together with the relative congresses and courses, does more good than harm to patients.[37] Future research should aim at verifying whether this phenomenon results exclusively in enhanced knowledge and translates into better care of women's health, or if it facilitates the dissemination of partly biased information within the scientific community.

Italian scientists should lobby for transparency of public disclosure of COIs of societies providing CME activity and on implementation of efficient societies' policies for interactions with industry. Moreover, the Ministry of Health should only grant CME credits to conferences and educational events provided that attendees are fully and publicly aware of financial connections between the scientific society and any industry involved, including quantitative information regarding funding for the meetings.[38-40] More in general, a sort of Sunshine Act [41] focussed on scientific societies and educational activity, in addition to that aimed at individual doctors, and with potential application to multiple settings and jurisdictions, could prove of great benefit for patients, practising physicians, and clinical investigators. A complete lack of transparency on the above issues nowadays appears hardly justifiable and ethically questionable. In fact, COIs of PMAs are more serious than individual ones, because, where distorted information is disseminated at educational events, the effect

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would be multiplied with potential substantial consequences on prescribing practices of many of the society's members.[3-5] Moreover, the definition of “conflict of interest” itself, in the case of PMAs, may be somewhat misleading as it has been pointed out that a medical organisation’s commitment to patients and public health is a moral duty and not a mere interest.[5]

Collaboration between PMAs and research and development departments of pharmacological companies and medical devices manufactures is very important for the advancement of medicine. This form of interaction is welcome in the interest of patients and society. On the other hand, collaboration between PMAs and company marketing departments on CME events and society annual meetings, may blur the distinction between the interest of the PMA, which is education, and that of industry, which is selling products.

Despite individual or organisational COIs, the officers of many medical associations may well be disinterested and passionate, and provide valuable activities for the benefit of society members. However, members of PMAs are not the end users of drugs and devices marketed by industry; rather they are the gatekeepers entrusted to make evidence-based recommendations to the real end user, that is, the patient.[9] When the citizens eventually have to pay the bill, either directly or indirectly through national health systems, the conduct of PMAs may not be only based on the presumed good faith of their officers, but should contemplate the provision of publicly available and easily accessible data on financial competing interests. Transparency and disclosures do not eliminate COIs,[42, 43] but may enable doctors and lay people to contextualise the scientific information disseminated in various ways by medical organisations, putting it in the right perspective.

CONTRIBUTION TO AUTHORSHIP

PVe, PVi and ES conceived and planned the article. All the authors searched the web to identify Italian obstetrical and gynaecological societies. PVe and MPF scrutinised the societies' websites, retrieved and tabulated data. All the authors interpreted the data. PVe drafted the manuscript and all the authors revised it. All the authors approved the final version of the manuscript.

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COMPETING INTEREST STATEMENT

All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf and declare: no support from any organisation for the submitted work; no financial relationships with any organisations that might have an interest in the submitted work in the previous three years; no other relationships or activities that could appear to have influenced the submitted work; PVe is associate editor of Human Reproduction Update and past president of the World Endometriosis Society; PVi is associate editor of Human Reproduction; ES is deputy editor of Human Reproduction.

DATA SHARING STATEMENT

There are no additional unpublished data from the study.

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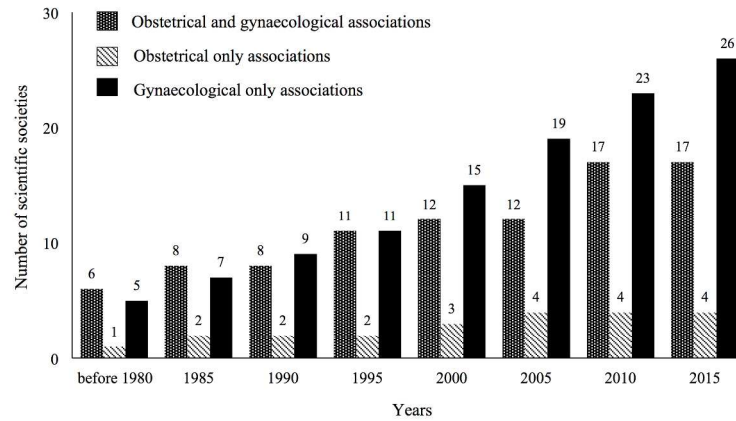
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575 FIGURE LEGEND

576 Variation in the number of Italian obstetrical and gynaecological societies over time. The
577 number on top of each column is the number of societies.

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209x297mm (300 x 300 DPI)

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites.*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COI of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
AGEO Associazione Ginecologi Extra Ospedalieri (Association of off hospital gynaecologists) http://www.ageo-federazione.it	1996	Yes	Yes	Yes	No	No	No	No	No	No	No	No
AGICO Associazione Ginecologi Consultoriali (Association of family clinic gynaecologists) http://www.agico.it/Agico-2007/home.asp	1985	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes
AGIF Associazione Ginecologi Italiani in Formazione (Association of in-training Italian gynaecologists) http://www.giovaniginecologi.org/home/	2009	Yes	Yes	Yes	No	No	No	No	No	No	No	Yes
AGITE Associazione Ginecologi Territoriali (Association of territorial gynaecologists) http://www.agite.eu/	2007	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes
AGUI Associazione Ginecologi Universitari Italiani (Association of Italian academic gynaecologists) http://www.aguionline.it/	1992	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COI of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
AIGE Associazione Italiana di Ginecologia Endocrinologica (Italian association of gynaecological endocrinology) http://www.ginendo.it/	2003	No	No	Yes	No	No	N.A.	No	No	No	No	Yes
AIPE Associazione Italiana pre-eclampsia (Italian Branch of the International Society for the Study of Hypertension in Pregnancy) http://www.preeclampsia.it/	2005	No	No	Yes	No	No	N.A.	No	No	No	No	No
AIUG Associazione Italiana di Urologia Ginecologica e del Pavimento Pelvico (Italian association of gynaecologic urology and of pelvic floor) http://www.aiug.eu/aiug.asp	1989	No	No	Yes	Yes	Yes	N.A.	No	No	No	No	No
AOGOI Associazione Ostetrici Ginecologi Ospedalieri Italiani (Association of hospital Italian gynaecologists and obstetricians) http://www.aogoi.it/	1948	No	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
ATGO Associazione Triveneta di Ginecologia e Ostetricia (North-eastern association of gynaecology and obstetrics) http://www.atgo.it/	1934	No	No	Yes	No	Yes	N.A.	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
CECOS Centro Studi e Conservazione Ovociti e Sperma Umani (Center for the study and preservation of human oocytes and sperm) http://www.cecos.it/	1984	No	Yes	Yes	No	Yes	No	No	No	No	No	No
FIOG Federazione Italiana di Ostetricia e Ginecologia (Italian federation of obstetrics and gynaecology) http://www.fiogonline.it/	2008	Yes	Yes	Yes	No	No	No	No	No	No	No	No
GILT Ginecologi Liguri del Territorio (Territorial gynaecologists of Liguria)	1994	No website found		Yes‡	No	No website found						No
GISCi Gruppo Italiano Screening del Cervicocarcinoma (Cervical cancer screening Italian group) http://www.gisci.it/	1996	No	Yes	Yes	Yes	No	No	No	No	Yes	No	Yes
GLUP Gruppo di lavoro in uroginecologia pavimento pelvico (Working group in pelvic floor urogynaecology) http://dev-test.glup.it/	2010	Yes	Yes	Yes	No	No	No	No	No	No	No	No
GREG Gruppo Romano di Endoscopia Ginecologica (Roman group of gynaecological endoscopy)	1995	No website found		Yes‡	No	No website found						No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
LAMM Società Laziale Abruzzese Marchigiana Molisana di Ostetricia e Ginecologia (Lazio, Abruzzo, Marche, and Molise society of obstetrics and gynaecology)	1971	No website found		Yes [‡]	No	No website found						No
PRO-FERT Società Italiana di Conservazione della Fertilità (Italian society for the preservation of fertility) http://profert.org/	2007	No	Yes	Yes	No	No	No	No	No	No	No	No
SCCL Società Campano Calabro Lucana di Ostetricia e Ginecologia (Campania, Calabria, and Lucania society of obstetrics and gynaecology)	1947	No website found		Yes [‡]	No	No website found						No
SEGi Società Italiana di Endoscopia Ginecologica (Italian society of gynaecological endoscopy) http://www.segionline.it/	2000	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No
SIC Società Italiana Contraccezione (Italian society for contraception) http://www.sicontraccezione.it/	2004	Yes	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SICHIG Società Italiana di Chirurgia Ginecologica (Italian society of gynaecological surgery) http://www.sichig.it/	1989	No	Yes	Yes	No	No	No	No	No	No	No	No
SICMIG Scuola Italiana di Chirurgia Mini Invasiva Ginecologica (Italian school of minimally invasive gynaecological surgery) http://www.sicmig.org/	2005	Yes	Yes	Yes	No	No	No	No	No	No	No	No
SICPCV Società Italiana di Colposcopia e Patologia Cervico Vaginale (Italian society of colposcopy and cervical and vaginal pathology) http://www.colposcopiaitaliana.it/	1980	No	Yes	Yes	No	No	No	No	No	No	No	No
SIDIP Società Italiana di Diagnosi Prenatale e Medicina Materno Fetale (Italian society of prenatal diagnosis and feto-maternal medicine) http://www.ilfeto.it/site/	1998	No	Yes	Yes	No	No	No	No	No	No	No	No
SIDR Società Italiana della Riproduzione (Italian society of reproduction) http://www.sidr.it/cms/view.html	1999	Yes	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COI of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIEOG Società Italiana di Ecografia Ostetrica e Ginecologica e Metodologie Biofisiche (Italian society of obstetrical and gynaecological ultrasonography and bio-physical methodologies) http://www.sieog.it/	1984	No	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
SIEPAM Società Italiana Endometriosi e Patologia Mestruale (Italian society of endometriosis and menstrual disorders) http://www.siepam.it/	2014	Yes	No	Yes	No	No	N.A.	No	No	No	No	Yes
SIERR Società Italiana di Embriologia, Riproduzione e Ricerca (Italian society of embryology, reproduction and research) http://www.sierr.it/	1998	No	Yes	Yes	No	No	No	No	No	No	No	Yes
SIFES E MR Società Italiana di Fertilità e Sterilità e Medicina della Riproduzione (Italian society of fertility, sterility and reproductive medicine) http://sifes.it/	1965	No	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIFIOG Società Italiana di Fitoterapia e Integratori in Ostetricia e Ginecologia (Italian society of phytoterapeutics and supplements in obstetrics and gynaecology) http://www.sifiog.it/	2008	Yes	No	Yes	No	No	N.A.	No	No	No	No	No
SIFR Società Italiana di Fisiopatologia della Riproduzione (Italian society for pathophysiology of reproduction)	1982	No website found		Yes‡	Yes	No website found						No
SIGIA Società Italiana di Ginecologia dell'Infanzia e dell'Adolescenza (Italian society of childhood and adolescent gynaecology) http://www.sigia.it/	1978	No	Yes	Yes	No	No	No	No	No	No	No	No
SIGITE Società Italiana di Ginecologia della Terza Età (Italian society for third age gynaecology) http://www.sigite.it/drupal/index.php	1991	No	Yes	Yes	No	No	No	No	No	No	No	Yes

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COI of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIGO Società Italiana di Ginecologia e Ostetricia (Italian society of gynaecology and obstetrics) http://www.sigo.it/home/	1892	No	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
SIM Società Italiana della Menopausa (Italian society of menopause) http://www.simenopausa.it/	2011	Yes	No	Yes	No	No	N.A.	No	No	No	No	No
SIMP Società Italiana di Medicina Perinatale (Italian society of perinatal medicine) http://www.simponline.it/site/home.asp	1984	Yes	Yes	Yes	No	No	No	No	No	No	No	No
SIOG Società Italiana di Oncologia Ginecologica (Italian society of gynaecological oncology) http://www.siog.it	1977	No	Yes	Yes	No	Yes	No	No	No	No	No	Yes
SIOS Società Italiana Ospedaliera Sterilità (Italian hospital society for sterility) http://www.siosteril.it/	2003	No	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIPGO Società Italiana per la Psicosomatica in Ginecologia e Ostetricia (Italian society for psychosomatics in gynaecology and obstetrics) http://www.sipgo.org/	1993	No	Yes	Yes	No	No	No	No	No	No	No	No
SIPO Società Italiana Policistosi Ovarica (Italian society of polycystic ovary syndrome)	2012	No website found		Yes‡	No	No website found						No
SIPPO Società Italiana di Psicoprofilassi Ostetrica (Italian society for obstetrical psycho-prophylaxis) http://www.sippo.eu/	1966	No	No	Yes‡	No	No	N.A.	No	No	No	No	No
SIPUF Società Italiana di Pelvi Perineologia e Urologia Femminile e Funzionale (Italian society of pelvi-perineology and female and functional urology) http://www.sipuf.net/sipuf/societa-italiana-di-pelvi-perineologia-e-urologia-femminile-e-funzionale.do	2007	Yes	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COI disclosure of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIRONG Società Italiana per la Ricerca Ostetrico-Neonatale-Ginecologica (Italian society for the obstetrical, neonatal, and gynaecological research) http://www.sirong.it/	2008	No	Yes	Yes	No	Yes	No	No	No	No	No	Yes
SIUD Società italiana di urodinamica (Italian society of urodynamics) http://www.siud.it/	1977	No	Yes	Yes	Yes	No	No	No	No	No	No	Yes
SLOG Società Lombarda di Ostetricia e Ginecologia (Lumbardy society of obstetrics and gynaecology) http://www.slog.org/	1950	No	Yes	Yes	No	No	No	No	No	No	No	No
SMIC Società Medica Italiana per la Contraccezione (Italian medical society for contraception) http://www.smicontraccezione.it/	2006	No	No	No	N.A.	No	N.A.	No	No	No	No	N.A.

*In 12 cases, including those in which a website was not found, the year of establishment of the association/society was obtained from the two major national professional associations (i.e., Società Italiana di Ginecologia and Ostetricia and Associazione Ostetrici e Ginecologi Ospedalieri Italiani), and presidents or past presidents of the societies.

† Specific directives regulating professional obstetrical and gynaecological associations' conduct in case of private financial support.

‡ When an association's website was not found or when the information was not indicated on website, CME activity was identified by scrutinising the online programmes of the society's conferences and courses.

COI = conflict of interest. CME = continuing medical education. PMA = professional medical association. N.A. = not applicable.

Supplementary table 2. Evaluation of the Società Italiana di Ginecologia e Ostetricia (SIGO) and the Associazione Ostetrici e Ginecologi Ospedalieri Italiani (AOGOI) websites according to the Health on the Net Foundation Code of Conduct (HONcode) principles.

Principles of HONcode Site Evaluation Form	SIGO	AOGOI
Principle 1. Information must be authoritative		
1. The site provides general information about the organization or individual responsible for its operation and content, and details about the editor or principal author are given with his/her credentials	Yes, an author's or editor's details with credentials are given	Yes, an author's or editor's details with credentials are given
2. The site provides medical/health information or advice	Some health/medical information is not attributed to an author	Some health/medical information is not attributed to an author
Principle 2. Complementarity/Mission/Assistance		
3. A statement declaring that information provided on the site is meant to complement and not replace any advice or information from a health professional is clearly provided	Yes	Yes
4. A statement describing the intended mission of the site is provided on the site	Yes	Yes
5. The site clearly mentions the intended audience of the site (general public, health professionals, students...)	Yes	Yes
Principle 3. Privacy - Confidentiality		
6. A Privacy/Confidentiality Policy regarding e-mail addresses, personal, non-personal and medical information is displayed on my website	Yes	Yes
7. Do my site and its mirrors respect the legal requirements, including those concerning medical and personal information privacy, that apply in the country and state of their location?	Yes	Yes
Principle 4. Information must be documented: Referenced and dated		
8. Is the last modification date provided for the site?	No	Yes, for all the pages of the site

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Supplementary table 2. Evaluation of the Società Italiana di Ginecologia e Ostetricia (SIGO) and the Associazione Ostetrici e Ginecologi Ospedalieri Italiani (AOGOI) websites according to the Health on the Net Foundation Code of Conduct (HONcode) principles. Continued.

9. Does the site contain information from external sources?	Yes, a bibliographic reference to the source data is given	Yes, a bibliographic reference to the source data is given
Principle 5. Justification of claims		
10. Does the site make claims relating to the benefit or performance of a specific medical treatment, commercial product or service?	Yes, the claims are based on the author's personal research or opinions	Yes, all claims are supported by clear references to scientific research results and/or published articles
Principle 6. Website contact details		
11. A valid email address for the webmaster or a link to a valid contact form is easily accessible throughout the site?	Yes	Yes
Principle 7. Disclosure of funding sources		
12. Is the source of the funding of my site clearly described?	No	No
Principle 8. Advertising policy		
13. The site displays advertising that, is a source of income	Advertising is not identified as such	Advertising is not identified as such
14. The site is part of a link/banner exchange	Yes, but there is no specific description about the site advertising policy	Yes, but there is no specific description about the site advertising policy
15. The site does not display advertising	There is no statement displayed	There is no statement displayed

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The proliferation of gynaecological scientific societies and their financial transparency: an Italian survey

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1 THE PROLIFERATION OF GYNAECOLOGICAL SCIENTIFIC SOCIETIES AND THEIR
2 FINANCIAL TRANSPARENCY: AN ITALIAN SURVEY

3

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20 Key words: scientific societies, obstetrics, gynaecology, competing interests.

21 Word count: 4052

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23 ABSTRACT

24 **Objectives:** To determine the number of Italian obstetrical and gynaecological societies, and
25 to ascertain their financial transparency.

26 **Design:** Internet-based national survey and website content analysis.

27 **Participants:** Currently active, not privately owned, non-religious, apolitical, obstetrical and
28 gynaecological associations.

29 **Methods:** From October 2014 to June 2015, scientific societies were identified using
30 combinations of search terms, and examining the website of the two main Italian obstetrical
31 and gynaecological organisations. Individual societies' websites were scrutinised by two
32 independent investigators.

33 **Primary and secondary outcome measures:** Number of Italian obstetrical and
34 gynaecological associations and its variation over time; 12 information categories defining the
35 general characteristics of the societies and their websites, and the financial transparency of the
36 associations.

37 **Results:** The initial web search yielded 56 professional obstetrical and gynaecological
38 associations but nine were excluded for various reasons. Of the remaining 47 professional
39 associations, 17 covered both obstetrics and gynaecology, four were specialised in obstetrics,
40 26 in gynaecology and 46 provided CME activities. The number of societies has quadrupled
41 in the last 35 years, increasing at a mean rate of one additional society per year. The
42 headquarters of the associations were located in the offices of a professional congress
43 organiser in 15 instances, and advertisements or links to industry products were present in 12
44 societies' websites. Bylaws were accessible in 32 websites. No information was publicly

45 available regarding competing interests, financial statements, and quantitative external
46 funding.

47 **Conclusions:** The number of obstetrical and gynaecological societies is remarkably high in
48 Italy, particularly in the gynaecological area. Despite CME activity provision, transparency of
49 societies regarding financial issues and competing interests was almost non-existent. Policies
50 addressing the interactions between medical associations and industry are available and
51 should be implemented.

STRENGTHS AND LIMITATIONS OF THE STUDY

- Different search strategies were adopted to identify all currently active Italian obstetrical and gynaecological scientific societies, i.e., Internet, executive personnel of the two main national organisations, and direct contacts with some presidents and past-presidents.
- Two independent investigators retrieved information, abstracted data on standardised forms and conducted a website content analysis on 12 items regarding the general characteristics of the medical associations and their websites, as well as societies' financial transparency.
- The data presented describe a selected picture of a specific medical specialty in Italy. The findings cannot be generalised to other medical specialties and other countries.

64 ETHICAL APPROVAL STATEMENT

65 The Ethic Committee’s approval was not required for this survey.

For peer review only

66 INTRODUCTION

67 A core mission of medical societies is dissemination of scientific information.[1, 2] They
68 foster research in distinct fields of medicine, promote medical education, and develop clinical
69 guidelines. Authoritative medical associations are also influential in modulating practice,
70 counselling administrators, advising politicians regarding public healthcare programmes, and
71 regulating professional conduct. Thus, the social role of these organisations entails
72 exceedingly important clinical and ethical implications.[1-4]

73 However, some authors are concerned that economic aspects are interfering with the
74 moral foundations of medical associations.[1] In particular, a progressive imbalance has been
75 observed in funding derived from membership dues and grants and contracts awarded by
76 government or charitable foundations, in favour of support from for-profit organisations [1, 5-
77 7]. This situation may generate a conflict of interest (COI), which has been defined as “a set
78 of circumstances that creates a risk that professional judgment or actions regarding a primary
79 interest will be unduly influenced by a secondary interest”. [8] The primary interest of a
80 scientific society is to promote the highest quality of care also through the education of its
81 members. [9] The secondary interest is, in this case, the financial well-being of the society
82 together with the financial profit of some commercial entities. A COI may occur not only if a
83 professional medical organisation (PMA) receives money from manufacturers of drugs or
84 devices used in the same medical area of interest as the society, but also when individual
85 officers of the organisation have personal financial ties to industries that could influence their
86 actions and decisions within the PMA. Of note, COI is a condition, not a behaviour. In other
87 words, when a COI exists, no actual unethical conduct has necessarily arisen. [5] However,
88 although COI and bias are not synonymous, the former is a demonstrated risk factor for the
89 latter.[10]

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90 Two different approaches have been suggested to deal with COIs of PMAs, i.e., a
91 divestment strategy (progressively discontinuing commercial support), and a management
92 strategy (disclosing COIs and adopting rules to limit their potentially pernicious effects).[5, 9]
93 As the operating budget of many PMAs is substantially based on industry funding, the latter
94 policy has generally been preferred, purportedly to ensure stability in organisation functioning
95 and avoid curtailments in services to members. [1, 5-7, 11] To be efficient, any strategy to
96 “manage” COIs about interactions with industry, should be based on thorough financial
97 transparency, particularly, but not exclusively, regarding commercial support of annual
98 meetings. In fact, most PMAs base their financial sustainability on revenues from periodic
99 congresses, as in these occasions industry generally purchases exhibit hall space, sponsors
100 conference sessions or satellite symposia, pays the registration fee for a variable number of
101 attendees, and buys advertising opportunities.[2, 9, 12, 13].

102 Complicating further the above scenario, the past decades have witnessed a tendency
103 toward proliferation of medical societies focussed on subspecialty areas or even single
104 diseases, paralleling the general trend of modern medicine in the direction of over-
105 specialisation. [14] The intrinsic benefit of creating small and subspecialty associations is the
106 possibility of increasing knowledge on specific disorders. However, compared with major
107 national and international organisations, small societies may have less impact regarding
108 public advocacy, information of healthcare decision makers, and definition of public health
109 system strategies. Moreover, small societies generally have restricted financial resources, thus
110 their possibility to fund research seems limited. In this regard, the proliferation of
111 subspecialty medical associations could also be viewed as a potential waste of precious
112 resources that could be invested more efficiently in the interest of patients.

113 In addition, the quality of the information disseminated by scientific organisations
114 should be scrutinised with care. Intellectual independence is essential, especially when

115 providing continuing medical education (CME) activity,[10, 15-17] but fragmentation and
116 subspecialisation may expose medical societies to increased financial vulnerability and,
117 hypothetically, this could result in an increase in the risk of undue influence of
118 pharmaceutical, biotechnology, and device industries. Noteworthy, the percentage of the
119 overall national funding for CME activities provided by industry is particularly high in Italy,
120 with reported figures varying from 60%[18] to almost 100%[19] of the total expenditure.

121 The phenomenon of proliferation of professional organisations appears to be
122 particularly intense in the gynaecological field, probably owing to the multitude of issues
123 regarding women's health. Therefore, we decided to conduct a survey in order to examine the
124 condition of obstetrical and gynaecological societies in Italy. The primary objectives were to
125 determine the overall number of associations and to verify whether a trend exists towards an
126 increase in the number of subspecialty organisations over time. Secondary aims were to
127 ascertain the societies' level of transparency regarding general competing interests and
128 funding from industry, and to evaluate if a relation exists between the provision of CME
129 activity and the degree of financial transparency.

130 METHODS

131 This survey was conducted by retrieving and analysing information from the Internet. As
132 publicly available data were used, the present study was exempt from the Ethics Committee's
133 approval. The study was restricted to professional organisations active during 2014 in Italy.
134 Websites were identified using 'Google', consistently ranked as the most popular search
135 engine (<http://www.google.com>). [20] The following Italian search terms and phrases were
136 used: "Italian obstetrical and gynaecological societies", "obstetrical and gynaecological
137 societies AND Italy", "Italian obstetrical and gynaecological associations", "obstetrical and
138 gynaecological associations AND Italy", "Italian obstetrical and gynaecological federations",

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139 “obstetrical and gynaecological federations AND Italy”, “Italian obstetrical and
140 gynaecological organisations”, “obstetrical and gynaecological organisations AND Italy”. In
141 addition, the websites of the two major national obstetrical and gynaecological societies
142 (Società Italiana di Ginecologia e Ostetricia, SIGO; Associazione Ostetrici Ginecologi
143 Ospedalieri Italiani, AOGOI) were examined with the objective of identifying all the
144 subspecialty organisations in the field affiliated to SIGO and AOGOI. All authors
145 independently conducted the initial search from October 31 to November 7, 2014. After
146 completion of the list of associations, these were categorised, based on their name, into
147 combined obstetrical and gynaecological, obstetrical only, and gynaecological only
148 organisations.

149 Individual societies’ websites were then independently scrutinised from November 8
150 to December 12, 2014, and from June 15 to 19, 2015, by two authors (PVe and MPF), in
151 order to verify the correctness of the initial categorisation, and to ascertain whether the
152 association was public (i.e., not privately owned by single individuals), and with a defined
153 mission and a regular board, including a president, a treasurer, a secretary, and an executive
154 committee. Individual or privately owned organisations, those not specifically aimed at
155 physicians, and those with a religious or political profile were excluded. Moreover,
156 information was collected on standardised abstraction forms on 12 items defining two
157 domains, i.e., i) the general characteristics of the society and its website (year of
158 establishment; whether the headquarters were independent or located in the offices of a
159 professional congress organiser and accredited CME provider; online availability of society's
160 bylaws; provision of CME activity; inclusion of sponsored sessions or symposia in the
161 society's last annual meeting program; presence on society's website of industry advertisement
162 or links to industries' websites), and ii) the financial transparency of the association
163 (discussion of financial COIs in society's bylaws; adoption of a policy for interactions with

industry; availability of financial COI disclosures of presidential trio (president, past president, and president-elect), board members and executive staff; online availability of annual financial statement; disclosure of restricted and unrestricted industry grants and individual donations; indication of industry sponsorship in the last annual meeting program based on informative printed text in addition to mere logo inclusion).

In cases where the information on a PMA's year of establishment was missing, the executive staff of the above two major national obstetrical and gynaecological societies were consulted by email and telephone. Moreover, PVe directly contacted the presidents and selected board members of some associations in order to obtain missing data from original documents. A final extraction form was compiled from the two separate evaluation forms, with correction or resolution of any discrepancies between abstractors by consensus reached after discussion or further joint re-examination of selected societies' websites.

In addition, two authors independently used the Health on the Net Foundation Code of Conduct [21] for medical websites, with the objective of examining the degree of transparency of the healthcare information provided on the websites of the two major national obstetrical and gynaecological associations, SIGO and AOGOI. The HONcode is an instrument developed to assess the intent of a website to publish accurate information, and it includes items on transparency, financial disclosure, and advertising policy [21].

RESULTS

The initial web search yielded 56 professional obstetrical and gynaecological associations, but two were immediately excluded because they were known to be privately owned (Società Italiana Studi di Medicina della Riproduzione, SISMeR) or individually managed (Fondazione Graziottin per la Cura del Dolore nella Donna). Examination of societies' websites resulted in the exclusion of three organisations with defined socio-political or

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188 religious characteristics (Associazione Italiana Ginecologi Ostetrici Cattolici, AICOG;
189 Società Italiana Procreazione Responsabile, SIPRe; Libera Associazione Italiana Ginecologi
190 per l'Applicazione della Legge 194/78, LAIGA). One association (Confederazione Italiana
191 Ginecologi Ospedalieri, CIGO) was excluded because its activities were unclear and not
192 typical of a regular scientific society (e.g., organisation of conferences and development of
193 clinical recommendations). Another association was apparently no longer currently active
194 (Società Italiana di Endoscopia e Laserterapia in Ginecologia, SIELG). Only one reviewer
195 excluded two other organisations. Joint re-examination of the two websites demonstrated that
196 the activity of one association (Fondazione Confalonieri Ragonese) was limited to drafting
197 clinical practice recommendations on behalf of AOGOI, whereas the activity of the other one
198 (Associazione Italiana di Ostetricia, AIO) was aimed mainly at midwives rather than
199 physicians. A shared decision was taken to exclude the latter two organisations.

200 Summary characteristics of the remaining 47 professional associations are shown in
201 Table 1. Individual societies' details regarding the general characteristics of the associations
202 and their websites as well as PMAs' financial transparency are included in online
203 Supplementary table 1.

TABLE 1. General characteristics and financial transparency of Italian professional obstetrical and gynaecological associations extracted from their websites.

Clinical and research area	No. with website	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity*	Sponsored session/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
Obstetrics and gynaecology (n=17)	14	7	12	17	4	8	0	0	0	0	0	8
Obstetrics only (n=4)	4	1	2	4	0	0	0	0	0	0	0	0
Gynaecology only (n=26)	23	7	18	25	5	4	0	0	0	1	0	7

Data are numbers. COI = conflict of interest. CME = continuing medical education. PMA = professional medical association.

*When an association's website was not found or when the information was not indicated on website, CME activity was identified scrutinising the online programmes of the society's conferences and courses.

[†] Specific directives regulating professional obstetrical and gynaecological associations' conduct in case of private/commercial financial support.

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A total of 24 organisations were affiliated with SIGO (<http://www.sigo.it/societa-affiliate/>), and six with AOGOI (<http://www.aogoi.it/opencms/sezioniOriz/societaAffiliate/index.html>). Seventeen "generalist" associations covered both obstetrics and gynaecology (the two main ones plus 15 minor societies), four were specialised in obstetrical areas only, and 26 were specialised in gynaecological areas only. In this latter group, seven organisations dealt with infertility, four with pelvic and endoscopic surgery, four with urogynaecology, and two with, respectively, cervical pathology, contraception, and climacteric. After exclusion of the 17 "generalist" organisations, the distribution of societies' main area of interest was substantially skewed towards gynaecology (26/30; 87%).

Six societies did not appear to have a website. In 12 cases, including those in which a website could not be found, the year of establishment of the association was obtained from SIGO or AOGOI executive personnel, and from direct contact between PVe and presidents or past-presidents. In the period 1980-2014 the number of Italian obstetrical and gynaecological societies has quadrupled, starting from 12 and increasing at a mean rate of one society per year in the last 35 years (Figure 1).

The headquarters of the associations were independent in 26/41 instances, and located in the offices of a professional congress organiser and accredited CME provider in the remaining 15. Society's bylaws were published online on 32/41 (78%) of the identified websites. Forty-six associations organised conferences and provided CME activities. When an official society's website was not identified or when the information was not indicated on website, CME activity was verified by scrutinising the online programmes of the societies' conferences and courses. A total of 9/46 associations included sponsored sessions or symposia in their last annual meeting program. Advertisements or links to industry products were present on 12/41 societies' websites (8 in the obstetrical and gynaecological subgroup and 4 in the gynaecological only subgroup).

With regard to financial transparency, in none of the 32 developed bylaws was the issue of COIs mentioned. No association had apparently developed a policy for interactions with industry. A total of 423 board members were identified, including the presidential trios, treasurers and secretaries. Forty-eight members were included at the same time on the board of two distinct organisations, 14 members on the board of three organisations, and five on the board of four organisations. The competing interest disclosures of board members and executive staff were never posted on societies' websites.

The annual financial statement was published online in only one case and, with this exception, no information was publicly available on any other website regarding the society's source of financial support, as no data was accessible on restricted and unrestricted industry grants or individual donations, nor on industry sponsorship for the last annual meetings, courses, or other educational events.

Evaluation of transparency of SIGO and AGOI websites according to the HONcode principles [21] identified lack of information (Supplementary table 2). In particular, neither website attributed certain health/medical information to an author; the sources of the funding of both sites were not clearly described; advertising was not always identified as such; and the sites were part of a link/banner exchange but there was no specific description about the site advertising policy. Moreover, the SIGO website did not provide the last modification date and made claims relating to the benefit or performance of a specific medical treatment, commercial product or service based on the author's personal research or opinion.

Both websites provided free CME e-learning courses supported by pharmaceutical industries manufacturing drugs or commercial products used specifically in those medical areas on which courses were focused. Finally, the SIGO website included descriptions of

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279 some campaigns supported by industries with direct or indirect interests in related medical
280 fields.

281 DISCUSSION

282 The results of the present survey on Italian obstetrical and gynaecological societies and
283 content analysis of their websites depict an academic scenario that warrants consideration. A
284 remarkably high number of organisations was identified, characterised by a progressive and
285 impressive increase over time, especially during the last decades. We do not have a clear
286 explanation for this phenomenon. According to the list of member societies of the
287 Federazione delle Società Medico-Scientifiche Italiane (Italian Federation of Medical-
288 Scientific Societies; FISM), which includes Italian medical and scientific societies involved in
289 medical education or research activities of national interest, this situation does not seem to be
290 generalizable to other medical specialties. [22] Of note, the gynaecological subgroup was
291 characterised by several replications, particularly in the fertility and sterility, pelvic and
292 endoscopic surgery, and urogynaecology areas. The reason for these duplications is not
293 readily understandable.

294 The observed disproportion in the distribution of subspecialty associations decidedly
295 cannot be explained by unequal distribution of the clinical content of the two main areas of
296 the addressed specialty, obstetrics and gynaecology. Thus, it could be hypothesised that
297 Italian gynaecologists were more scientifically proactive compared with their obstetrical
298 colleagues, but we could not find evidence to support this interpretation. An alternative
299 theoretical explanation of this observation is that commercial sponsorship skewed the topics
300 in favour of disorders from which a larger profit could be made. In this regard, gynaecology
301 might prove a more lucrative medical area compared with obstetrics, at least in terms of

markets for several costly new drugs, surgical devices, and diagnostic tools. However, we have no data to support this hypothesis.

Financial transparency of the organisations included was almost non-existent, as we were unable to retrieve relevant, publicly available information, with the exception of the annual financial statement of a single, small gynaecological association. Six associations did not appear to have a website, thus providing no publicly available information. Unfortunately, online publishing of annual budgets and data regarding financial support is not a legal requirement for Italian scientific societies, and we could not identify alternative sources of information. We could not verify if and to what extent financial relations were in place between Italian obstetrical and gynaecological associations and industry, and we are unable to reject the hypothesis that they did not exist. This also applies to commercial support of annual meetings and educational events, although in this case the obstetrical and gynaecological area would constitute an exception with respect to data on overall industry funding of Italian CME activities.[18, 19]

We used websites as the main source of information regarding a society's financial transparency. It could be argued that websites can be useful to identify national PMAs, but they provide no accurate specific information on COIs and commercial funding. This constitutes a limitation of our study, as we could have sent a questionnaire directly to individual medical organisations or interviewed the president and executive officers. However, the aim of our survey was to verify whether information regarding COIs of board members and industry support of Italian gynaecological societies was easily and publicly accessible, which nowadays means posted on a society's website [17]. The concept of transparency should not imply the need for individual investigation into a society's board members or executive staff by doctors and citizens to acquire this type of information.

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Almost all the identified societies provided CME activity through conferences and courses. Lack of disclosure, in societies' websites, regarding industry support for scientific events involving CME activity (or lack of a website) is neither surprising nor unlawful, but raises ethical concerns. Some relevant information can be retrieved from the website of the Agenzia Nazionale per i Servizi Sanitari Regionali (Age.na.s), which manages the national CME program on behalf of the Italian Ministry of Health. However, although the industries sponsoring the events are listed, the financial support is expressed as a relative percentage of an overall budget that is not quantified (http://ecm.agenas.it/BancaDati/SB_Lista_Cerca_Accr.asp; accessed on March 23, 2015).

Independently of legal requirements, we believe that scientific societies should provide data on industry support of CME activity spontaneously, and should post it on their websites. This seems particularly important when the organisations delivering CME activity, which is a source of income for the provider, do not have independent headquarters, but are hosted by professional congress organisers that may receive money also from pharmaceutical companies and manufacturers of medical devices,[23, 24] or when advertisements or links to industry products are included in their websites. However, without a formal evaluation of CME “products” (i.e., scientific quality and compliance with society mandate), no conclusions can be drawn.

Competing interests of members of the boards and executive committees of a society were also not disclosed, and this appears somewhat concerning.[1, 5, 9] In general, finding experts without competing interests is difficult, and ideally they would all be concentrated in the boards of a few major obstetrical and gynaecological societies. The multiplication of boards and committees needed as a consequence of the proliferation of smaller organisations, particularly in the gynaecological area, implies that most of their directors and executives will have COIs, simply because there are not sufficient experts without COIs to cover all the

available positions. This may have implications regarding a society's activities, including the development of practice guidelines.[25] This issue would be greater if members with COIs serve on the board of more than one association.

Taking a selected picture of a specific country is a limit of our study that impedes generalisation of the findings. However, we considered that this survey allowed us to define a general scheme to be adopted for an investigation of this type, identifying reasonable endpoints and specific information categories. We are not aware of similar surveys published in the scientific literature, and believe that this scheme could also be used to investigate the condition of PMAs in different specialties and different countries.

Rothman and co-workers described in detail the many potential threats to PMAs' integrity, identified specific COIs that may affect the organisations' activity, and formulated guidelines to prevent undue industry influence aimed at divestment from commercial support rather than management of financial competing interests.[2] In fact, the authors maintain that "PMAs should work toward a complete ban on pharmaceutical and medical device industry funding (\$0), except for income from journal advertising and exhibit hall fees".[2]

The Council of Medical Specialty Societies was created in USA in 1965 with the objective of providing an independent forum for cross-specialty collaboration in order to influence policy on issues with a nationwide scope, such as medical education and accreditation. The Council has issued a code for interactions with companies that includes seven core principles covering COI, financial disclosure, independent program development, and independent leadership.[26] With regard to transparency, the code states that "Societies will make their conflict of interest policies and/or forms available to their members and the public", and "Societies will disclose company support (at a minimum educational grants, corporate sponsorships, charitable contributions, and support of research grants), making this

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information available to their members and the public”, and “Societies will disclose all financial and uncompensated relationships that key society leaders and members of the board of directors of the society’ membership organization have with companies, making this information available to their members and the public”.[26] Up to now, the code has been signed by 32 North-American member societies of the Council and by 17 North-American non-member societies.[27]

Examples already exist of PMAs disclosing on their website the breakdown of industry contribution toward the consolidated revenue of the society, as well as disclosure statements reported by each member of the board of directors [28], and publishing in meeting programs the company from which payment is received, the amount of payment by categories, and the specific type of relationship held with the company.[29] A policy on rigorous control over COIs has been implemented by several medical and surgical scientific societies,[19, 28-34] in some cases without detrimental consequences in terms of finances, membership, attendance at annual meetings, or leadership recruitment.[29, 31, 32]

It is currently unclear if the observed progressive growth in the number of gynaecological associations, together with the relative congresses and courses, does more good than harm to patients.[35] Future research should aim at verifying whether this phenomenon results exclusively in enhanced knowledge and translates into better care of women's health, or if it facilitates the dissemination of partly biased information within the scientific community.

Italian scientists should lobby for transparency of public disclosure of COIs of societies providing CME activity and on implementation of efficient societies' policies for interactions with industry. Moreover, the Ministry of Health should only grant CME credits to conferences and educational events provided that attendees are fully and publicly aware of

financial connections between the scientific society and any industry involved, including quantitative information regarding funding for the meetings.[36-38] More in general, a sort of Sunshine Act [39] focussed on scientific societies and educational activity, in addition to that aimed at individual doctors, and with potential application to multiple settings and jurisdictions, could prove of great benefit for patients, practising physicians, and clinical investigators. A complete lack of transparency on the above issues nowadays appears hardly justifiable and ethically questionable. Indeed, COIs of PMAs might be considered more serious than individual ones, because, where distorted information is disseminated at educational events, the effect would be multiplied with potential substantial consequences on prescribing practices of many of the society's members.[3-5] Moreover, the definition of “conflict of interest” itself, in the case of PMAs, may be somewhat misleading as it has been pointed out that a medical organisation’s commitment to patients and public health is a moral duty and not a mere interest.[5]

Collaboration between PMAs and research and development departments of pharmacological companies and medical devices manufactures is very important for the advancement of medicine. This form of interaction is welcome in the interest of patients and society. On the other hand, collaboration between PMAs and company marketing departments on CME events and society annual meetings, may blur the distinction between the interest of the PMA, which is education, and that of industry, which is selling products.

Despite individual or organisational COIs, the officers of many medical associations may well be disinterested and passionate, and provide valuable activities for the benefit of society members. However, members of PMAs are not the end users of drugs and devices marketed by industry; rather they are the gatekeepers entrusted to make evidence-based recommendations to the real end user, that is, the patient.[9] When the citizens eventually have to pay the bill, either directly or indirectly through national health systems, the conduct

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424 of PMAs may not be only based on the presumed good faith of their officers, but should
425 contemplate the provision of publicly available and easily accessible data on financial
426 competing interests. Transparency and disclosures do not eliminate COIs,[40, 41] but may
427 enable doctors and lay people to contextualise the scientific information disseminated in
428 various ways by medical organisations, putting it in the right perspective.

For peer review only

429 CONTRIBUTION TO AUTHORSHIP

430 PVe, PVi and ES conceived and planned the article. All the authors searched the web to
431 identify Italian obstetrical and gynaecological societies. PVe and MPF scrutinised the
432 societies' websites, retrieved and tabulated data. All the authors interpreted the data. PVe
433 drafted the manuscript and all the authors revised it. All the authors approved the final version
434 of the manuscript.

435

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437 This research received no specific grant from any funding agency in the public, commercial
438 or not-for-profit sectors.

439

440 COMPETING INTEREST STATEMENT

441 PVe is associate editor of Human Reproduction Update and past president of the World
442 Endometriosis Society; PVi is associate editor of Human Reproduction; ES is deputy editor of
443 Human Reproduction.

444 DATA SHARING STATEMENT

445 There are no additional unpublished data from this study.

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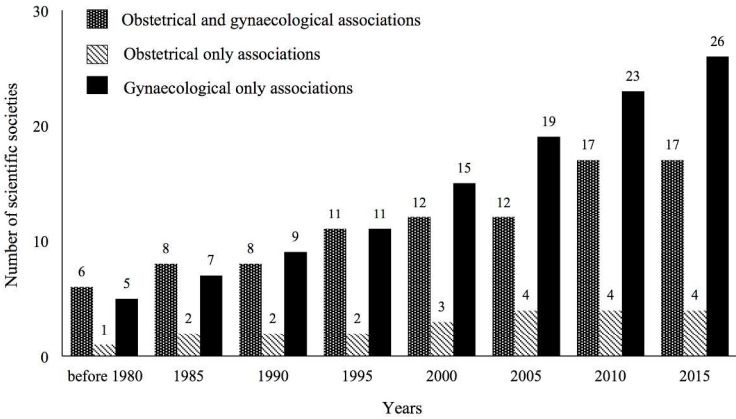
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550 FIGURE LEGEND

551 Variation in the number of Italian obstetrical and gynaecological societies over time. The

552 number on top of each column is the number of societies.

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Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites.*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COI of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
AGEO Associazione Ginecologi Extra Ospedalieri (Association of off hospital gynaecologists) http://www.ageo-federazione.it	1996	Yes	Yes	Yes	No	No	No	No	No	No	No	No
AGICO Associazione Ginecologi Consultoriali (Association of family clinic gynaecologists) http://www.agico.it/Agico-2007/home.asp	1985	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes
AGIF Associazione Ginecologi Italiani in Formazione (Association of in-training Italian gynaecologists) http://www.giovaniginecologi.org/home/	2009	Yes	Yes	Yes	No	No	No	No	No	No	No	Yes
AGITE Associazione Ginecologi Territoriali (Association of territorial gynaecologists) http://www.agite.eu/	2007	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes
AGUI Associazione Ginecologi Universitari Italiani (Association of Italian academic gynaecologists) http://www.aguionline.it/	1992	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
AIGE Associazione Italiana di Ginecologia Endocrinologica (Italian association of gynaecological endocrinology) http://www.ginendo.it/	2003	No	No	Yes	No	No	N.A.	No	No	No	No	Yes
AIPE Associazione Italiana pre-eclampsia (Italian Branch of the International Society for the Study of Hypertension in Pregnancy) http://www.preeclampsia.it/	2005	No	No	Yes	No	No	N.A.	No	No	No	No	No
AIUG Associazione Italiana di Urologia Ginecologica e del Pavimento Pelvico (Italian association of gynaecologic urology and of pelvic floor) http://www.aiug.eu/aiug.asp	1989	No	No	Yes	Yes	Yes	N.A.	No	No	No	No	No
AOGOI Associazione Ostetrici Ginecologi Ospedalieri Italiani (Association of hospital Italian gynaecologists and obstetricians) http://www.aogoi.it/	1948	No	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
ATGO Associazione Triveneta di Ginecologia e Ostetricia (North-eastern association of gynaecology and obstetrics) http://www.atgo.it/	1934	No	No	Yes	No	Yes	N.A.	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online [†]	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
CECOS Centro Studi e Conservazione Ovociti e Sperma Umani (Center for the study and preservation of human oocytes and sperm) http://www.cecos.it/	1984	No	Yes	Yes	No	Yes	No	No	No	No	No	No
FIOG Federazione Italiana di Ostetricia e Ginecologia (Italian federation of obstetrics and gynaecology) http://www.fiogonline.it/	2008	Yes	Yes	Yes	No	No	No	No	No	No	No	No
GILT Ginecologi Liguri del Territorio (Territorial gynaecologists of Liguria)	1994	No website found		Yes [‡]	No	No website found						No
GISCI Gruppo Italiano Screening del Cervicocarcinoma (Cervical cancer screening Italian group) http://www.gisci.it/	1996	No	Yes	Yes	Yes	No	No	No	No	Yes	No	Yes
GLUP Gruppo di lavoro in uroginecologia pavimento pelvico (Working group in pelvic floor urogynaecology) http://dev-test.glup.it/	2010	Yes	Yes	Yes	No	No	No	No	No	No	No	No
GREG Gruppo Romano di Endoscopia Ginecologica (Roman group of gynaecological endoscopy)	1995	No website found		Yes [‡]	No	No website found						No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
LAMM Società Laziale Abruzzese Marchigiana Molisana di Ostetricia e Ginecologia (Lazio, Abruzzo, Marche, and Molise society of obstetrics and gynaecology)	1971	No website found		Yes‡	No	No website found						No
PRO-FERT Società Italiana di Conservazione della Fertilità (Italian society for the preservation of fertility) http://profert.org/	2007	No	Yes	Yes	No	No	No	No	No	No	No	No
SCCL Società Campano Calabro Lucana di Ostetricia e Ginecologia (Campania, Calabria, and Lucania society of obstetrics and gynaecology)	1947	No website found		Yes‡	No	No website found						No
SEGi Società Italiana di Endoscopia Ginecologica (Italian society of gynaecological endoscopy) http://www.segionline.it/	2000	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No
SIC Società Italiana Contraccezione (Italian society for contraception) http://www.sicontraccezione.it/	2004	Yes	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SICHIG Società Italiana di Chirurgia Ginecologica (Italian society of gynaecological surgery) http://www.sichig.it/	1989	No	Yes	Yes	No	No	No	No	No	No	No	No
SICMIG Scuola Italiana di Chirurgia Mini Invasiva Ginecologica (Italian school of minimally invasive gynaecological surgery) http://www.sicmig.org/	2005	Yes	Yes	Yes	No	No	No	No	No	No	No	No
SICPCV Società Italiana di Colposcopia e Patologia Cervico Vaginale (Italian society of colposcopy and cervical and vaginal pathology) http://www.colposcopiaitaliana.it/	1980	No	Yes	Yes	No	No	No	No	No	No	No	No
SIDIP Società Italiana di Diagnosi Prenatale e Medicina Materno Fetale (Italian society of prenatal diagnosis and feto-maternal medicine) http://www.ilfeto.it/site/	1998	No	Yes	Yes	No	No	No	No	No	No	No	No
SIDR Società Italiana della Riproduzione (Italian society of reproduction) http://www.sidr.it/cms/view.html	1999	Yes	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIEOG Società Italiana di Ecografia Ostetrica e Ginecologica e Metodologie Biofisiche (Italian society of obstetrical and gynaecological ultrasonography and bio-physical methodologies) http://www.sieog.it/	1984	No	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
SIEPAM Società Italiana Endometriosi e Patologia Mestruale (Italian society of endometriosis and menstrual disorders) http://www.siepam.it/	2014	Yes	No	Yes	No	No	N.A.	No	No	No	No	Yes
SIERR Società Italiana di Embriologia, Riproduzione e Ricerca (Italian society of embryology, reproduction and research) http://www.sierr.it/	1998	No	Yes	Yes	No	No	No	No	No	No	No	Yes
SIFES E MR Società Italiana di Fertilità e Sterilità e Medicina della Riproduzione (Italian society of fertility, sterility and reproductive medicine) http://sifes.it/	1965	No	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIFIOG Società Italiana di Fitoterapia e Integratori in Ostetricia e Ginecologia (Italian society of phytoterapeutics and supplements in obstetrics and gynaecology) http://www.sifiog.it/	2008	Yes	No	Yes	No	No	N.A.	No	No	No	No	No
SIFR Società Italiana di Fisiopatologia della Riproduzione (Italian society for pathophysiology of reproduction)	1982	No website found		Yes‡	Yes	No website found						No
SIGIA Società Italiana di Ginecologia dell'Infanzia e dell'Adolescenza (Italian society of childhood and adolescent gynaecology) http://www.sigia.it/	1978	No	Yes	Yes	No	No	No	No	No	No	No	No
SIGITE Società Italiana di Ginecologia della Terza Età (Italian society for third age gynaecology) http://www.sigite.it/drupal/index.php	1991	No	Yes	Yes	No	No	No	No	No	No	No	Yes

Supplementary table 1. Details of the characteristics of Italian professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIGO Società Italiana di Ginecologia e Ostetricia (Italian society of gynaecology and obstetrics) http://www.sigo.it/home/	1892	No	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes
SIM Società Italiana della Menopausa (Italian society of menopause) http://www.simenopausa.it/	2011	Yes	No	Yes	No	No	N.A.	No	No	No	No	No
SIMP Società Italiana di Medicina Perinatale (Italian society of perinatal medicine) http://www.simponline.it/site/home.asp	1984	Yes	Yes	Yes	No	No	No	No	No	No	No	No
SIOG Società Italiana di Oncologia Ginecologica (Italian society of gynaecological oncology) http://www.siog.it	1977	No	Yes	Yes	No	Yes	No	No	No	No	No	Yes
SIOS Società Italiana Ospedaliera Sterilità (Italian hospital society for sterility) http://www.siosteril.it/	2003	No	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIPGO Società Italiana per la Psicosomatica in Ginecologia e Ostetricia (Italian society for psychosomatics in gynaecology and obstetrics) http://www.sipgo.org/	1993	No	Yes	Yes	No	No	No	No	No	No	No	No
SIPO Società Italiana Policistosi Ovarica (Italian society of polycystic ovary syndrome)	2012	No website found		Yes‡	No	No website found						No
SIPPO Società Italiana di Psicoprofilassi Ostetrica (Italian society for obstetrical psycho-prophylaxis) http://www.sippo.eu/	1966	No	No	Yes‡	No	No	N.A.	No	No	No	No	No
SIPUF Società Italiana di Pelvi Perineologia e Urologia Femminile e Funzionale (Italian society of pelvi-perineology and female and functional urology) http://www.sipuf.net/sipuf/societa-italiana-di-pelvi-perineologia-e-urologia-femminile-e-funzionale.do	2007	Yes	Yes	Yes	No	No	No	No	No	No	No	No

Supplementary table 1. Details of the characteristics of professional obstetrical and gynaecological associations extracted from their websites (continued).*

Name of the association/society	Established year	Headquarters located in the offices of a professional congress organiser	Society bylaws posted on website	CME activity	Sponsored sessions/symposia included in the PMA's last annual meeting program	Industry advertisement on society's website or links to industries' websites	Financial COI issue discussed in bylaws	Policy for interaction with industry available online†	Financial COIs of presidents, board members, and executive staff disclosed on website	Annual financial statement available online	Disclosure of financial support (industry grants and individual donations) available online	Industry sponsorship indicated in the PMA's last annual meeting program
SIRONG Società Italiana per la Ricerca Ostetrico-Neonatale-Ginecologica (Italian society for the obstetrical, neonatal, and gynaecological research) http://www.sirong.it/	2008	No	Yes	Yes	No	Yes	No	No	No	No	No	Yes
SIUD Società italiana di urodinamica (Italian society of urodynamics) http://www.siud.it/	1977	No	Yes	Yes	Yes	No	No	No	No	No	No	Yes
SLOG Società Lombarda di Ostetricia e Ginecologia (Lumbardy society of obstetrics and gynaecology) http://www.slog.org/	1950	No	Yes	Yes	No	No	No	No	No	No	No	No
SMIC Società Medica Italiana per la Contraccezione (Italian medical society for contraception) http://www.smicontraccezione.it/	2006	No	No	No	N.A.	No	N.A.	No	No	No	No	N.A.

*In 12 cases, including those in which a website was not found, the year of establishment of the association/society was obtained from the two major national professional associations (i.e., Società Italiana di Ginecologia and Ostetricia and Associazione Ostetrici e Ginecologi Ospedalieri Italiani), and presidents or past presidents of the societies.

† Specific directives regulating professional obstetrical and gynaecological associations' conduct in case of private financial support.

‡ When an association's website was not found or when the information was not indicated on website, CME activity was identified by scrutinising the online programmes of the society's conferences and courses.

COI = conflict of interest. CME = continuing medical education. PMA = professional medical association. N.A. = not applicable.

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Supplementary table 2. Evaluation of the Società Italiana di Ginecologia e Ostetricia (SIGO) and the Associazione Ostetrici e Ginecologi Ospedalieri Italiani (AOGOI) websites according to the Health on the Net Foundation Code of Conduct (HONcode) principles.

Principles of HONcode Site Evaluation Form	SIGO	AOGOI
Principle 1. Information must be authoritative		
1. The site provides general information about the organization or individual responsible for its operation and content, and details about the editor or principal author are given with his/her credentials	Yes, an author's or editor's details with credentials are given	Yes, an author's or editor's details with credentials are given
2. The site provides medical/health information or advice	Some health/medical information is not attributed to an author	Some health/medical information is not attributed to an author
Principle 2. Complementarity/Mission/Assistance		
3. A statement declaring that information provided on the site is meant to complement and not replace any advice or information from a health professional is clearly provided	Yes	Yes
4. A statement describing the intended mission of the site is provided on the site	Yes	Yes
5. The site clearly mentions the intended audience of the site (general public, health professionals, students...)	Yes	Yes
Principle 3. Privacy - Confidentiality		
6. A Privacy/Confidentiality Policy regarding e-mail addresses, personal, non-personal and medical information is displayed on my website	Yes	Yes
7. Do my site and its mirrors respect the legal requirements, including those concerning medical and personal information privacy, that apply in the country and state of their location?	Yes	Yes
Principle 4. Information must be documented: Referenced and dated		
8. Is the last modification date provided for the site?	No	Yes, for all the pages of the site

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Supplementary table 2. Evaluation of the Società Italiana di Ginecologia e Ostetricia (SIGO) and the Associazione Ostetrici e Ginecologi Ospedalieri Italiani (AOGOI) websites according to the Health on the Net Foundation Code of Conduct (HONcode) principles. Continued.

9. Does the site contain information from external sources?	Yes, a bibliographic reference to the source data is given	Yes, a bibliographic reference to the source data is given
Principle 5. Justification of claims		
10. Does the site make claims relating to the benefit or performance of a specific medical treatment, commercial product or service?	Yes, the claims are based on the author’s personal research or opinions	Yes, all claims are supported by clear references to scientific research results and/or published articles
Principle 6. Website contact details		
11. A valid email address for the webmaster or a link to a valid contact form is easily accessible throughout the site?	Yes	Yes
Principle 7. Disclosure of funding sources		
12. Is the source of the funding of my site clearly described?	No	No
Principle 8. Advertising policy		
13. The site displays advertising that, is a source of income	Advertising is not identified as such	Advertising is not identified as such
14. The site is part of a link/banner exchange	Yes, but there is no specific description about the site advertising policy	Yes, but there is no specific description about the site advertising policy
15. The site does not display advertising	There is no statement displayed	There is no statement displayed