



HAL
open science

Prevalence, intensity, impact on quality of life and insights of dysmenorrhea among French women: A cross-sectional web survey

Hervé Fernandez, Anthony Barea, Isabella Chanavaz-Lacheray

► To cite this version:

Hervé Fernandez, Anthony Barea, Isabella Chanavaz-Lacheray. Prevalence, intensity, impact on quality of life and insights of dysmenorrhea among French women: A cross-sectional web survey. *Journal of Gynecology Obstetrics and Human Reproduction*, 2020, 49, pp.101889 -. 10.1016/j.jogoh.2020.101889 . hal-03493115

HAL Id: hal-03493115

<https://hal.science/hal-03493115v1>

Submitted on 21 Nov 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution - NonCommercial 4.0 International License

1 Prevalence, Intensity, Impact on Quality of Life and Insights of dysmenorrhea among
2 French women: a cross-sectional web survey

3

4 FERNANDEZ Hervé¹, BAREA Anthony², CHANAVAZ-LACHERAY Isabella³.

5

6

7

8 1 AP-HP, Hôpital Bicêtre, GHU Sud, Department of Gynecology and Obstetrics,
9 94276 Le Kremlin-Bicêtre, France; Inserm, Centre of Research in Epidemiology
10 and Population Health (CESP), U1018, 94276 Le Kremlin-Bicêtre, France;
11 University Paris Sud Orsay, 94276 Le Kremlin-Bicêtre, France.

12 2 IPSOS France, 35 rue du Val de Marne, 75628 Paris Cedex 13, France

13 3 Centre de l'endométriose, Clinique Tivoli Ducos, 91 rue Rivière, 33000 Bordeaux,
14 France

15

16 Corresponding author:

17 Hervé FERNANDEZ
18 Hospital Bicêtre
19 Department of Gynecology and Obstetrics
20 78 rue du Général Leclerc
21 94270 Le Kremlin Bicêtre
22 Tél: +33 1 45 21 77 01
23 Mail: herve.fernandez@aphp.fr

24

25

26

27 **Funding Information**

28 This work was supported by Theramex

29

1 Prevalence, Intensity, Impact on Quality of Life and Insights of dysmenorrhea among
2 French women: a cross-sectional web survey

3

4 FERNANDEZ Hervé¹, BAREA Anthony², CHANAVAZ-LACHERAY Isabella³.

5

6

7

8 1 AP-HP, Hôpital Bicêtre, GHU Sud, Department of Gynecology and Obstetrics,
9 94276 Le Kremlin-Bicêtre, France; Inserm, Centre of Research in Epidemiology
10 and Population Health (CESP), U1018, 94276 Le Kremlin-Bicêtre, France;
11 University Paris Sud Orsay, 94276 Le Kremlin-Bicêtre, France.

12 2 IPSOS France, 35 rue du Val de Marne, 75628 Paris Cedex 13, France

13 3 Centre de l'endométriose, Clinique Tivoli Ducos, 91 rue Rivière, 33000 Bordeaux,
14 France

15

16 Corresponding author:

17 Hervé FERNANDEZ
18 Hospital Bicêtre
19 Department of Gynecology and Obstetrics
20 78 rue du Général Leclerc
21 94270 Le Kremlin Bicêtre
22 Tél: +33 1 45 21 77 01
23 Mail: herve.fernandez@aphp.fr

24

25

26

27 **Funding Information**

28 This work was supported by Theramex

29

30 Abstract

31

32 **OBJECTIVE:** Determine prevalence and intensity of primary dysmenorrhea in a
33 sample of french women and assess impact on daily life and Quality of Life, care
34 pathway and pain management

35 **METHODS:** This cross-sectional web-based survey was conducted from December
36 19th2018 through January 10th2019 among a representative sample of 3001 French
37 women aged 16 to 50.

38 **RESULTS:** 2375 women (79%) reported having pain during menstruation, currently
39 or in the past. 52% reported being currently affected, 27% had been affected in the
40 past and 21% never suffered. Among younger women under 24, 66% reported
41 current dysmenorrhea. Mean rating of pain intensity, evaluated on a visual analog
42 scale from 0 to 10, was 6 + 1.9 in women presently having dysmenorrhea and 42%
43 reported rating between 7 and 10. The impact on daily life was strong and there was
44 a significant reduction of SF-36 scores in women experiencing dysmenorrhea.
45 Among the 79% of women affected by dysmenorrhea, (current or past) 53% never
46 used any medication and respectively 58% and 66% never sought medical advice.

47 **CONCLUSION:** Dysmenorrhea is very frequent in France with a significant impact on
48 daily life and Quality of Life. There is a real inadequacy in the recognition and the
49 management of this pathology, too often considered as common by the patients.
50 There is a strong need for better information of the women and to raise the
51 awareness of first line health-care professionals that any dysmenorrhea and
52 especially severe dysmenorrhea must be accurately assessed and managed with the
53 available therapeutic means

54

55 **KEYWORDS:** Primary dysmenorrhea, Menstrual Pain, Prevalence, Quality of Life,
56 cross-sectional web-based survey, Pain management

57

58

59 **Introduction**

60 Dysmenorrhoea is commonly defined as painful menstrual cramps of uterine origin,
61 temporally related to menstruations. Based upon aetiology, it can be classified into
62 primary and secondary dysmenorrhoea, the latter being linked to a recognized
63 pathological condition such as endometriosis for instance. The onset of primary
64 dysmenorrhoea is usually observed early after menarche. Pain lasts for a few hours
65 to a couple of days, and is generally associated with menstrual flow. Even though
66 primary dysmenorrhoea is widely acknowledged as by far the most frequent
67 gynaecological condition among women of reproductive age, its precise prevalence is
68 difficult to establish since figures vary among studies and among countries.
69 Estimates range from 45% to 95% depending on analyses [1] and are around 75% in
70 women under the age of 25 [2, 3]. In France prevalence data are scarce [4]. Many
71 risk factors have been found in the literature, including heavy and longer menstrual
72 bleeding, an early age of menarche, a family history of dysmenorrhoea, and tobacco
73 and (or) alcohol consumption [5]. Conversely, childbearing and increasing age are
74 generally considered as protective factors [6]. The overall impact of dysmenorrhoea
75 is very high. It is clearly the first cause of gynaecological morbidity in women of
76 reproductive age, and its burden extends beyond health systems through losses of
77 workforce (absenteeism and disturbed presenteeism) [1, 5]. Moreover, dysmenorrhea
78 has a negative impact on daily life and Quality of Life (QOL) [6-8]

79 Despite its prevalence and societal importance, there are still gaps in knowledge
80 regarding primary dysmenorrhoea. Also, in France, we lack data regarding national
81 prevalence, impact on QOL, perception and awareness of the condition in women,
82 and regarding their actual management, own evaluation of health system and their
83 expectations. We therefore conducted a large nationwide study aiming to specify the

84 exact prevalence of dysmenorrhea and also to have a descriptive analysis of this
85 symptom and its consequences and management, in order to provide actionable
86 insights to determine areas for improvement for information, diagnosis and treatment.

87

88 **Methods**

89 A cross-sectional web-based survey was conducted from December 19th 2018
90 through January 10th 2019 among a representative sample of 3001 French women
91 aged 16 to 50. The study sample had been targeted and investigated throughout the
92 Ipsos Access panel that gathers 314 077 French panelists. Regarding Ipsos online
93 surveys, extensive quality procedures are in place to ensure that the survey inputs
94 allow for high quality survey outputs. In general, 97 237 panelists have been selected
95 thanks to statistical sampling following the adjustments criteria on age, socio-
96 professional category, geographical area and type of city based on the National
97 Institute of Statistics and Economic Studies census data for the population of women
98 in a pre-targeted population of female aged 18 to 50. In particular,
99 representativeness of the current study sample was ensured afterward, based upon
100 established corrective methods. The comparison of the results obtained on the
101 predefined variables with the objectives set at the beginning of the field made it
102 possible to determine the population of the sample. An adjustment of the results to
103 correct at the margin via the Rim Weighting method (application of a weighting
104 coefficient to restore each individual to their weight in the sample) then finalized the
105 number of women included in the sample.

106 The content of the questionnaire was constructed with the steering committee of the
107 study. The questionnaire collected data regarding demographics, gynecological
108 history, presence and perception of menstruations and pain, evaluated on a visual

109 analog scale (VAS) from 0 to 10, care pathway, women's evaluation of actual medical
110 care, impact of dysmenorrhea on daily life and QOL (using the Short-Form 36), and
111 their expectations in particular regarding medical information. A French version of the
112 questionnaire can be found in the Appendix.

113 Except for the Short-Form 36, statistical analyses were performed using COSI
114 software. Descriptive statistics include frequency tables, mean and standard
115 deviations. Regarding the Short-Form 36 analysis, normal distribution of the
116 continuous variables was assessed using the Shapiro-Wilk Test. Non parametric
117 tests were used to compare the Physical Health Component Scores (PHCS) and
118 Mental Health Component Scores (MHCS) between the groups (Kruskal-Wallis). A p
119 value<0.05 was considered as significant. Statistical tests were performed using
120 SPSS Statistics 24 (IBM, 2016, Chicago, IL, USA).

121

122

123 **Results**

124 3001 French women participated to the survey. Main demographic data in terms of
125 age, geographical area, employment, parity and type of contraception method used
126 are presented in Table 1.

127

128 *Prevalence severity and perception of dysmenorrhea*

129

130 Among the survey population a total of 2375 women (79%) reported having
131 experienced pain during menstruation, currently or in the past. 1559 women (52%)
132 reported being currently affected, 816 (27%) had been affected in the past and 626
133 (21%) never suffered from pain during menstruation. The prevalence of current

134 dysmenorrhea was significantly higher in younger women (66% in women from 16 to
135 24 versus 52% in all age group), table 2. The proportion of women reporting pain
136 during menstruation was higher among those with heavy menstrual flow: 69% vs.
137 39%. Also, women that did not take any contraceptive method reported pain around
138 menstruation more frequently than others (59% vs. 48%).

139 Mean rating of pain intensity was 6 + 1.9 in women presently having dysmenorrhea
140 and was significantly higher in the 16-24 age group (6,3 + 1,8, $p < 0,05$). 42% of these
141 women reported rating of pain intensity between 7 and 10 out of ten and again the
142 percentage of these women was significantly higher in the younger women. In
143 contrast, prevalence, intensity and severity of dysmenorrhea was comparable with
144 regard to parity. (table 2).

145 When surveying women from the subgroup declaring dysmenorrhea in their prior
146 history, mean age of pain termination was 26.9 + 9.1 and 54% of them reported pain
147 termination before 25. Among the same subgroup, mean duration of dysmenorrhea
148 was 9.2 years + 7.8 yet for 39% of them ($n=318$), mean duration exceeded 10 years.

149 When asked about perception of dysmenorrhea, 1980 women (66%) considered
150 being affected by pain around menstruation as normal. This precise response was
151 found higher among the subgroup of women currently affected by dysmenorrhea
152 ($n=1106$; 71%) and still high in women that never experienced pain around
153 menstruation ($n=331$; 53%).

154 When asked about their knowledge of the medical term dysmenorrhea, only 36% of
155 the whole population declared having heard or read about it.

156 1140 women (38%) among the whole study sample thought that dysmenorrhea was
157 a serious problem.

158

159 *Daily impact and QOL (Short-Form 36)*

160 Data regarding physical and psychosocial impact are presented in Table 3.
161 Quantified mean impact score of dysmenorrhea was quite weakly rated on average.
162 On the other hand, the daily impact was rated as important/very important for 67% of
163 the women currently having dysmenorrhea for fitness and 50% for sexual life. We
164 also measured that 22% of women currently affected by dysmenorrhea had missed
165 at least one day of work within the last 12 months (average duration of work
166 absence=1.2 days \pm 4.5). Regarding QOL measured by the Short form SF 36
167 Questionnaire, both the Physical Health component scores and the Mental Health
168 component scores were significantly reduced in the subgroup of women currently
169 affected by dysmenorrhea versus women that were never affected as exhibited in
170 Table 4.

171

172 *Care pathway and pain management (table 5)*

173 Among women being affected by dysmenorrhea, either currently or in the past
174 (n=2375), 1377 (58%) never used any medication and 2042 never used any other
175 type of treatment (86%) for managing pain. Medications cited to manage pain were
176 analgesics (83% among women presently affected, 86% for those affected in the
177 past), antispasmodics (42% among women presently affected, 51% for those
178 affected in the past), anti-inflammatory agents (41% among women presently
179 affected, 28% for those affected in the past), contraceptive pills (30% among women
180 presently affected, 45% for those affected in the past), and others (9% among
181 women presently affected, 6% for those affected in the past). Most women used or
182 had used medications according to a prescription from a physician (46% for those
183 currently affected by dysmenorrhea vs. 56% for those affected in the past) yet a

184 substantial proportion also did it through self-medication (54% for those currently
185 affected by dysmenorrhea vs. 44% for those affected in the past). Among women that
186 were currently affected by dysmenorrhea, alternative treatments to drugs were as
187 follows: hot-water bag (79%), essential oil (43%), so-called home-made remedies
188 (42%), homeopathy (39%), medical devices (15%), Chinese herbs (12%). Among
189 women that were currently or had been in the past affected by dysmenorrhea,
190 respectively 58% and 66% had never sought any medical advice (table 5). Among
191 the 924 women in both groups which once consulted a physician, 49% initially asked
192 some assistance to her primary care physician, and 31% to her community
193 gynecologist. In 74% of these women, no diagnosis was retained. A medication was
194 prescribed in 70% of these women. The two most commonly prescribed types of
195 drugs were contraceptive pills and analgesics yet with reverse ranking depending on
196 the subgroup: women currently affected cited analgesics first (57%), followed by
197 contraceptive pill (32%) while women that had had dysmenorrhea cited contraceptive
198 pill first (53%), and then analgesics (43%). Among the same subgroup of 924 women
199 that once consulted a physician, 105 (11%) received a prescription for any type of
200 testing, mostly ultrasonography (89%) and (or) blood test (62%), and (or) magnetic
201 resonance imaging (29%).

202

203 *Evaluation of medical care and expectations*

204 Average delays between the onset of symptoms and first medical consultation were
205 2.9 and 2.3 years in women currently experiencing dysmenorrhea and those that had
206 such an issue in the past, respectively. When surveyed about the reasons for such a
207 delay, multiple responses were recorded, the most frequent of which were: pain was
208 tolerable (32%), pain was transient (34%), symptoms were not serious enough

209 (30%), preconception that nothing was doable (30%), it was only a matter of heavy
210 menstrual flow (28%), and some relatives were affected by the same symptoms
211 (27%). When interrogating women that had had dysmenorrhea, and after exclusion of
212 those for which pain had resolved immediately, pain relief took on average 3.8 years.
213 Among the 162 women that had been affected by dysmenorrhea in the past and that
214 had seen at least a physician for it, the time elapsed between the first medical
215 consultation and pain relief was judged as too long for 80% of them. However, when
216 women experiencing current or past dysmenorrhea were directly questioned about
217 their evaluation of their healthcare providers, positive opinions or responses were as
218 follows: strong adherence to prescribed management (86%), good attention paid by
219 the provider to dysmenorrhea (81%), active attitude with respect to finding care
220 solutions (82%), no hidden information (79%), no perceived inhibition to ask intimate
221 questions (75%), good knowledge of the condition (76%), sufficient time taken for
222 reinsurance (74%).

223 When surveyed about informational tool that would permit to improve experience and
224 management of dysmenorrhea, the following responses were equally cited by around
225 one women out of four: a website, awareness campaign deployed on several types of
226 media, poster campaign targeting the lay public, information leaflets about painful
227 menstruations in waiting rooms of gynecologists.

228

229

230

231

232

233

234 **Discussion**

235 The aim of our study was to determine if dysmenorrhea is a common or rare
236 symptom, what is the level of pain intensity, if it has consequences on women's life, if
237 it is considered as normal or abnormal, if and how women try to relieve it.

238 We studied a population aged from 16 to 45 and as a consequence some women
239 reported current dysmenorrhea and some reported having had dysmenorrhea in the
240 past.

241 We decided to show the results of the 2 groups when we found differences which
242 were probably due to several factors. First for some women dysmenorrhea may have
243 occurred several years ago and perception may have changed, but also trends in the
244 management and acceptability of certain treatments, including the pill, may have
245 evolved over time.

246 Our study has strengths and limitations.

247 A major strength of this study was the size of our sample and the selection of the
248 population from the French Ipsos access panel with statistical sampling following the
249 adjustment criteria on age socio-professional category, geographical area and type of
250 city. Representativeness of the population was ensured upon established corrective
251 methods. Therefore our findings could be extrapolated to a general population of
252 young women. One of the potential limitations is the fact that our data are
253 retrospective and were assessed by a self-report questionnaire, which does not
254 guarantee the accuracy of the information collected. Also the women in our study
255 population were all above 16, knowing that the mean age of menarche (and
256 consequently dysmenorrhea) was 13 + 1.6.

257

258 Our national survey of a representative sample of 3001 French women found very
259 high overall rates of current and/or past dysmenorrhea (79%), in line with various
260 type of studies having found a consistently high prevalence in women of different
261 ages and countries [1-3].

262 Our data confirmed that dysmenorrhea is more frequent in younger women with a
263 prevalence of current dysmenorrhea of 66% in women aged from 16 to 24 years.
264 This result is very close to the findings of another French cohort of 10 229
265 menstruating women showing a prevalence of 62.3% in younger women [4] and is
266 also in line with the recent American College of Obstetrics and Gynaecology
267 Committee Opinion [9].

268 In contrast, our study did not show a lower prevalence in childbearing women despite
269 it has been previously shown [6].

270 The percentage of women currently having dysmenorrhea who reported a pain
271 intensity score from 7 to 10 was high (42%), especially in younger women, which is
272 considered by previous bibliography as severe dysmenorrhea [8]. The high severity
273 of dysmenorrhea has also recently been shown by Fernandez Martinez et al with
274 66% of young students experiencing intensity scores from 7 to 10 [8]. This is an
275 important matter knowing that Ragab et al in a study on 654 adolescents showed that
276 68.8% of the women had severe dysmenorrhea and that 25.5% of them had
277 ultrasounds findings suggestive of endometriosis. 12.3% of them had a diagnosis of
278 endometriosis with positive histo-pathological evidence of endometriosis [10]. These
279 findings are consistent with the estimated high prevalence of endometriosis affecting
280 5% of reproductive age women, with a peak between 25 years and 35 years of age
281 [11]. But dysmenorrhea is part of the symptoms of endometriotic patients who are
282 also suffering from pelvic chronic pain and/or infertility.

283

284 A study conducted in Turkey on 101 adolescents showed significant reduction of the
285 Pediatric Quality of Life Inventory (PedsQL) [7]. A recent Spanish study on 305
286 female university students used EuroQol-5 dimensions-5 levels (EQ-5D-5L) and
287 patients with dysmenorrhea showed significant reduction of the total score for
288 perceived QOL [8]

289 Only few studies used standardized tools to assess QOL impact of dysmenorrhea
290 [7,8,12] and one of the strength of our study was the use of the reference generic
291 QOL Short Form 36 (SF-36) showing a significant reduction of both physical and
292 mental components in women experiencing dysmenorrhea

293 Dysmenorrhea's consequences on daily life have been well documented in the
294 literature [6] and our data confirm the negative impact on fitness, social and family
295 life, sexual life but also an alteration of relationships with relatives and the abandon
296 of daily events or activities..

297 The current survey raises several points worth considering regarding dysmenorrhea.
298 Considering important repercussion of dysmenorrhea, it is surprising to see that in
299 our study, 58 to 66% of the patients did not seek medical advice. But this fact has
300 been already found in literature: only 34% (71/207) of young australian women
301 reporting dysmenorrhea had ever consulted a healthcare provider [13]. This is
302 probably due to the fact that in our study, 66% considered being affected by pain
303 around menstruation as normal. It could also be related with the difficulty for anyone
304 to answer questions about pain, especially retrospectively: there is a clearly a
305 discrepancy in our study between the mean average intensity score of 6 and the fact
306 that two thirds of the women using the same questionnaire consider this pain as
307 normal or acceptable.

308 The conjunction of the importance of the high level of intensity of dysmenorrhea and
309 the very low level of medical care of affected women highlighted in this study is
310 worrying for several reasons. First the strong impact on multiple daily life events and
311 on Quality of Life shown here is not acceptable for women and second there is a risk
312 of missing out on a diagnosis of secondary dysmenorrhea, especially endometriosis.
313 These findings could be one of the explanations to the long delay in recognizing and
314 treating this disease (average from 6 to 12 years) [14].

315 In terms of pain management, the high proportion of women (53%) not taking any
316 type of medication is in line with the low figures of women seeking medical advice
317 mentioned above and also with previous literature (52% in the Australian study by
318 Subasinghe et al [13]. The use of analgesics, NSAIDs and oral contraception was
319 reported in our study as usually recommended [1, 13]. Self-medication rate is high
320 and is in line with a recent metanalysis by Armour et al (55%) [2].

321 The rate of women suffering from dysmenorrhea while taking an oral contraception
322 (49% of them) is to be noted. Oral contraception is well known to reduce pain during
323 menstruation but these results confirm that dysmenorrhea frequently persists despite
324 the intake of the pill. This has been shown in several studies: Sulak et al previously
325 show in a study in 262 women taking a standard oral contraception with a seven days
326 hormone free interval that 70 % of the women documented some degree of pelvic
327 pain during the hormone free interval compared with a prevalence of 11-23% during
328 active-pill weeks [15]. In a large European study of 5728 women, Nappi et al [16]
329 observed prevalence of dysmenorrhea in 46% of the women taking a combined oral
330 contraception versus 55% ($p < 0,0001$) in non-users. Standard COC clearly improved
331 dysmenorrhea but in close to 50% of the women dysmenorrhea persisted which is in
332 line with our study results (49%). Despite the fact that we didn't have the information

333 wether the pill was taken cyclically or continuously, the slight difference of
334 amenorrhea rates between women having or not a contraceptive mean indicates that
335 most of the women probably used cyclical contraception. These observations have
336 been previously found in litterature and conducted some authors to suggest that
337 extended use of combined oral contraception is effective for the treatment for primary
338 dysmenorrhea and may be superior to the traditional cycling regimen [17-19].
339 In conclusion, we found that, as in other countries, dysmenorrhea is a very frequent
340 problem in France with a strong and significant impact on daily life and Quality of Life
341 (QOL). There is a real inadequacy in the management of this pathology, too often
342 considered as common by the patients. There is a strong need for better information
343 of the women and also to raise the awareness of health professionals who are in the
344 first line, including pharmacists and general practitioners, that any dysmenorrhea and
345 especially severe dysmenorrhea must be assessed and managed with the available
346 therapeutic means. Primary dysmenorrhea must not be neglected in order to avoid
347 contributing to delayed diagnosis of more severe pathologies such as endometriosis.
348 Some experts believe that endometriosis can be suspected and should be diagnosed
349 even in the absence of histological confirmation and that surgery should not be
350 mandatory if clear therapeutic benefits cannot be foreseen [12, 20, 21]. Furthermore
351 treating dysmenorrhea with continuous or extended oral contraception might be a
352 good option for dysmenorrhea especially when endometriosis is suspected.

353

354 **Funding Information**

355 This work was supported by Theramex

356

- 357 [1] Armour M, Parry K, Al-Dabbas MA, Curry C, Holmes K, MacMillan F, Ferfolja T,
358 Smith CA. Self-care strategies and sources of knowledge on menstruation in 12,526
359 young women with dysmenorrhea: A systematic review and meta-analysis. PLoS
360 One. 2019;14: e0220103. [https://doi: 10.1371/journal.pone.0220103](https://doi.org/10.1371/journal.pone.0220103)
- 361 [2] Proctor M, Farquhar C. Diagnosis and management of dysmenorrhoea. BMJ.
362 2006 332:1134-8. [https://doi: 10.1136/bmj.332.7550.1134](https://doi.org/10.1136/bmj.332.7550.1134)
- 363 [3] Fernández-Martínez E, Onieva-Zafra MD, Parra-Fernández ML. Lifestyle and
364 prevalence of dysmenorrhea among Spanish female university students. PLoS One.
365 2018;13:e0201894. [https://doi: 10.1371/journal.pone.0201894](https://doi.org/10.1371/journal.pone.0201894).
- 366 [4] Margueritte F. Algies pelviennes chroniques : prévalence et caractéristiques
367 associées dans la cohorte Constances. Revue d'Épidémiologie et de Santé Publique
368 2016;64:134
- 369 [5] De Sanctis V, Soliman A, Bernasconi S, Bianchin L, Bona G, Bozzola M, Buzi F,
370 De Sanctis C, Tonini G, Rigon F, Perissinotto E. Primary Dysmenorrhea in
371 Adolescents: Prevalence, Impact and Recent Knowledge. *Pediatr Endocrinol Rev*.
372 2015;13:512-20.
- 373 [6] Bernardi M, Lazzeri L, Perelli F, Reis FM, Petraglia F. Dysmenorrhea and related
374 disorders. *F1000Res*. 2017;6:1645. [https://doi: 10.12688/f1000research.11682.1](https://doi.org/10.12688/f1000research.11682.1).
- 375 [7] Sahin N, Kasap B, Kirli U, Yeniceri N, Topal Y. Assessment of anxiety-depression
376 levels and perceptions of quality of life in adolescents with dysmenorrhea. *Reprod*
377 *Health*. 2018;15:13. [https://doi: 10.1186/s12978-018-0453-3](https://doi.org/10.1186/s12978-018-0453-3).
- 378 [8] Fernández-Martínez E, Onieva-Zafra MD, Parra-Fernández ML. The Impact of
379 Dysmenorrhea on Quality of Life Among Spanish Female University Students. *Int J*
380 *Environ Res Public Health*. 2019;16:pii: E713. [https://doi: 10.3390/ijerph16050713](https://doi.org/10.3390/ijerph16050713).
- 381 [9] ACOG Committee Opinion No. 760: Dysmenorrhea and Endometriosis in the
382 Adolescent. *Obstet Gynecol*. 2018;132:e249-58. [https://doi:](https://doi.org/10.1097/AOG.0000000000002978)
383 [10.1097/AOG.0000000000002978](https://doi.org/10.1097/AOG.0000000000002978).
- 384 [10] Prevalence of endometriosis among adolescent school girls with severe
385 dysmenorrhea: A cross sectional prospective study. Ragab A, Shams M, Badawy A,
386 Alsammani MA. *Int J Health Sci*. 2015;9:273-81
- 387 [11]Vercellini P, Viganò P, Somigliana E, Fedele L. Endometriosis: pathogenesis and
388 treatment. *Nat Rev Endocrinol*. 2014;10:261-75. [https://doi:](https://doi.org/10.1038/nrendo.2013.255)
389 [10.1038/nrendo.2013.255](https://doi.org/10.1038/nrendo.2013.255). Epub 2013 Dec 24.
- 390 [12] Iacovides S1, Avidon I, Bentley A, Baker FC. Reduced quality of life when
391 experiencing menstrual pain in women with primary dysmenorrhea. *Acta Obstet*
392 *Gynecol Scand*. 2014;93:213-7. [https://doi: 10.1111/aogs.12287](https://doi.org/10.1111/aogs.12287). Epub 2013 Nov 25.
- 393 [13] Subasinghe AK, Happo L, Jayasinghe YL, Garland SM, Gorelik A, Wark JD.
394 Prevalence and severity of dysmenorrhoea, and management options reported by
395 young Australian women. *Aust Fam Physician*. 2016;45:829-34.

- 396 [14] Chapron C, Lafay-Pillet MC, Monceau E, Borghese B, Ngô C, Souza C, de
397 Ziegler D. Questioning patients about their adolescent history can identify markers
398 associated with deep infiltrating endometriosis. *Fertil Steril*. 2011;95:877-81.
399 <https://doi:10.1016/j.fertnstert.2010.10.027>.
- 400 [15] Sulak PJ, Scow RD, Preece C, et al. Hormone withdrawal symptoms in oral
401 contraceptive users. *Obstet Gynecol*. 2000;95:261-66. [https://doi:10.1016/s0029-7844\(99\)00524-4](https://doi:10.1016/s0029-7844(99)00524-4)
- 403 [16] Nappi RE, Fiala C, Chabbert-Buffet N, Häusler G, Jamin C, Lete I, Lukasiewicz M,
404 Pintiaux A, Lobo P. Women's preferences for menstrual bleeding frequency: results
405 of the Inconvenience Due to Women's Monthly Bleeding (ISY) survey. *Eur J
406 Contracept Reprod Health Care*. 2016;21:242-50. [https://doi:
407 10.3109/13625187.2016.1154144](https://doi:10.3109/13625187.2016.1154144).
- 408 [17] Dmitrovic R, Kunselman AR, Legro RS. Continuous compared with cyclic oral
409 contraceptives for the treatment of primary dysmenorrhea: a randomized controlled
410 trial. *Obstet Gynecol*. 2012;119:1143-50. [https://doi:
411 10.1097/AOG.0b013e318257217a](https://doi:10.1097/AOG.0b013e318257217a).
- 412 [18] Strowitzki T, Kirsch B, Elliesen J. Efficacy of ethinylestradiol 20 µg/drospirenone
413 3 mg in a flexible extended regimen in women with moderate-to-severe primary
414 dysmenorrhoea: an open-label, multicentre, randomised, controlled study. *J Fam
415 Plann Reprod Health Care*. 2012;38:94-101. [https://doi: 10.1136/jfprhc-2011-100225](https://doi:10.1136/jfprhc-2011-100225).
- 416 [19] Momoeda M, Kondo M, Elliesen J, Yasuda M, Yamamoto S, Harada T. Efficacy
417 and safety of a flexible extended regimen of ethinylestradiol/drospirenone for the
418 treatment of dysmenorrhea: a multicenter, randomized, open-label, active-controlled
419 study. *Int J Womens Health*. 2017;9:295-305. [https://doi: 10.2147/IJWH.S134576](https://doi:10.2147/IJWH.S134576).
- 420 [20] Johnson NP1, Hummelshoj L; World Endometriosis Society Montpellier
421 Consortium. Consensus on current management of endometriosis. *Hum
422 Reprod*. 2013;28:1552-68. [https://doi: 10.1093/humrep/det050](https://doi:10.1093/humrep/det050). Epub 2013 Mar 25.
- 423 [21] Collinet P, Fritel X, Revel-Delhom C, Ballester M, Bolze PA, Borghese
424 B, Bornshtein N, Boujenah J, Bourdel N, Brillac T, Chabbert-Buffet N, Chauffour
425 C, Clary N, Cohen J, Decanter C, Denouël A, Dubernard G, Fauconnier
426 A, Fernandez H, Gauthier T, Golfier F, Huchon C, Legendre G, Loriau J, Mathieu-
427 d'Argent E, Merlot B, Niro J, Panel P, Paparel P, Philip CA, Ploteau S, Poncelet
428 C, Rabischong B, Roman H, Rubod C, Santulli P, Sauvan M, Thomassin-Naggara
429 I, Torre A, Wattier JM, Yazbeck C, Canis M. Management of endometriosis: CNGOF-
430 HAS practice guidelines (short version). *Gynecol Obstet Fertil Senol*. 2018 ;46:144-
431 55. [https://doi: 10.1016/j.gofs.2018.02.027](https://doi:10.1016/j.gofs.2018.02.027).
- 432

Characteristic	Numbers (n (%))
Age	
16-19	300 (10%)
20-24	390 (13%)
25-34	840 (28%)
35-44	901 (30%)
45-50	570 (19%)
Geographical area	
Paris area	630 (21%)
North-East	660 (22%)
North-West	660 (22%)
South-East	721 (24%)
South-West	330 (11%)
Employment	
Agricultural	30 (1%)
Independent	180 (6%)
Senior manager	420 (14%)
Intermediate professions	660 (22%)
Employee	691 (23%)
Worker	480 (16%)
Retired	30 (1%)
Inactive	510 (17%)
Number of children	
None	1471 (49%)
1	750 (25%)
2	600 (20%)
3	180 (6%)
Contraception method	
Absence	1395 (47%)
Presence	1606 (53%)
Pill	1078 (67%)
Hormonal IUD	204 (13%)
Non hormonal IUD	212 (13%)
Implant	84 (5%)
Male condom	68 (4%)
Female condom	20 (1%)
Patch	14 (1%)
Vaginal ring	4 (0,2%)

Multiple contraception methods are possible, the total can be superior to 100%

Table 1. Demographics and main characteristics of women included in study sample (n= 3001)

		Women currently affected by dysmenorrhea	Women that had been affected in the past by dysmenorrhea
		1559/3001 (52%)	816/3001 (27%**)
Prevalence by age group & parity n (%)	<i>16-24 years</i>	458/690 (66%*)	119/690 (17%**)
	<i>25-34 years</i>	476/840 (57%*)	188/840 (22%)
	<i>35-44 years</i>	453/901 (50%)	258/901 (29%)
	<i>45-50 years</i>	215/570 (38%*)	207/570 (36%**)
	<i>0 children</i>	829/1471 (56%)	349/1471 (24%)
	<i>≥1 children</i>	773/1530 (50%)	423/1530 (28%)
Pain intensity (mean score ± SD, VAS 0-10)	<i>All women</i>	6±1.9	5.7±2.2
	<i>16-24 years</i>	6.3±1.8 *	5.3±2.1
	<i>25-34 years</i>	5.9±1.9	5.3±2.2

	<i>35-44 years</i>	6±1.9	5.8±2.2
	<i>45-50 years</i>	5.8±1.9	6.3±2.2**
	<i>0 children</i>	6±1.9	5.7±2.3
	<i>≥1 children</i>	6.1±1.9	5.7±2.1
Severe pain Intensity (VAS mean score ≥ 7) n (%)	<i>All women</i>	Women currently affected by dysmenorrhea whose pain intensity is ≥ 7 655/1559 (42%)	Women that had been affected in the past by dysmenorrhea whose pain intensity is ≥ 7 294/816 (36%)
	<i>16-24 years</i>	223/655 (34%***)	38/294 (13%***)
	<i>25-34 years</i>	170/655 (26%)	59/294 (20%***)
	<i>35-44 years</i>	183/655 (28%)	100/294 (34%)
	<i>45-50 years</i>	79/655 (12%***)	97/294 (33%)
	<i>0 children</i>	341/655 (52%)	135/294 (46%)

	<i>≥1 children</i>	314/655 (48%)	159/294 (54%)
--	--------------------	---------------	---------------

Table2. prevalence and severity of dysmenorrhea

* p <0, 05 Significant statistical difference compared to the whole population of Women currently affected by dysmenorrhea (n=1559)

** p <0, 05 Significant statistical difference compared to the whole population of Women that had been affected in the past by dysmenorrhea (n=816)

*** p<0,05 Significant statistical difference compared to all other age groups

		Women currently affected by dysmenorrhea (N=1559)	Women that had been affected in the past by dysmenorrhea (n=816)
Quantified impact of dysmenorrhea ** (Mean impact score)	Physical impact	4.9*±2.5	3±2.3
	Psychological impact	4.2*±2.7	2.7±2.2
	Professional impact	3.4*±2.5	2.2 ±2.1
	Social impact	3.3*±2.5	2.2 ±2.1
	Impact on relationships with relatives	3.5*±2.5	2.3±2.1
	Impact on leisure	4.2*±2.6	2.8±2.3
Self-assessment of daily impact of dysmenorrhea*** (% of Important/very important)	Fitness	67%*	39%
	Sexual life	60%*	43%
	Psychological balance	50%*	29%

	Social life	46%*	29%
	Affective life	44%*	27%
	Family life	36%*	20%
	Professional life	36%*	20%

Table 2. Impact on different aspects of women's life according to status with respect to dysmenorrhea.

* p <0, 05 (inter-group comparison)

**Rating from 1 to 10, 1 meaning no impact and 10 meaning the most possibly important impact that one can imagine. Phrasing of the question was slightly different according to subgroups, tailored to the presence or not of dysmenorrhea.

***Women were asked to respond according to 4 possible options, from "not important at all" to "very important". Phrasing of the question was again tailored to the subgroup women belonged to.

	Women that were never affected n=626 (21%)	Women currently affected by dysmenorrhea n= 1559 (52%)	Women that had been affected by dysmenorrhea in the past n=816 (27%)	p
PHCS	83.05±15.7	71.21±19.37	78.41±17.83	<0.001
MHCS	72.39±17.31	59.23±19.68	66.15±18.46	<0.001

PHCS: Physical Health Component Scores; MHCS: Mental Health Component Scores.

Table 4. Short-Form 36 Component Scores according to disease status.

	Women currently affected by dysmenorrhea (N=1559)	Women that had been affected in the past by dysmenorrhea (n=816)
Never used medication 1377/2375 (58%)	950/1559 (61%)	427/816 (52%)
Used medication 998/2375 (42%) *	609/1559 (39%)	389/816 (48%)
<i>analgesics</i>	507/609 (83%)	337/389 (86%)
<i>antispasmodics</i>	58/609 (42%)	201/389 (51%)
<i>Anti-inflammatory agents</i>	252/609 (41%)	110/389 (28%)
<i>Contraceptive pills</i>	185/609 (30%)	176/389 (45%)
<i>Other medications</i>	55/609 (9%)	23/389 (6%)
<i>Prescribed medications</i>	278/609 (46%)	218/389 (56%)
<i>Self-medication</i>	331/609 (54%)	171/389 (44%)

Never used alternative therapies 2042/2375 (86%)	1301/1559 (83%)	741/816 (91%)
Used alternatives therapies 333/2375 (14%) *	258/1559 (17%)	75/1559 (9%)
<i>Hot-water bag</i>	204/258 (79%)	59/75(79%)
<i>Essential oil</i>	110/258 (43%)	13/75(17%)
<i>Home-made remedies</i>	109/258 (42%)	29/75(39%)
<i>homeopathy</i>	101/258 (39%)	18/75(24%)
<i>Medical devices</i>	38/258 (15%)	2/75(3%)
<i>Chinese herbs</i>	30/258 (12%)	2/75(3%)
Never consulted a physician	912/1559 (58%)	539/816 (66%)
Consulted a physician	647/1559 (42%)	277/816 (34%)

Table 5. Care pathway and pain management

- Women may have taken several medications/alternative therapies