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

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

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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 19<sup>th</sup>2018 through January 10<sup>th</sup>2019 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 19<sup>th</sup> 2018  
90 through January 10<sup>th</sup> 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  $9.2 \text{ years} + 7.8$  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±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

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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

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Characteristic	Numbers (n (%))
<b>Age</b>	
16-19	300 (10%)
20-24	390 (13%)
25-34	840 (28%)
35-44	901 (30%)
45-50	570 (19%)
<b>Geographical area</b>	
Paris area	630 (21%)
North-East	660 (22%)
North-West	660 (22%)
South-East	721 (24%)
South-West	330 (11%)
<b>Employment</b>	
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%)
<b>Number of children</b>	
None	1471 (49%)
1	750 (25%)
2	600 (20%)
3	180 (6%)
<b>Contraception method</b>	
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)**

		<b>Women currently affected by dysmenorrhea</b>	<b>Women that had been affected in the past by dysmenorrhea</b>
		1559/3001 (52%)	816/3001 (27%**)
<b>Prevalence by age group &amp; parity n (%)</b>	<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%)
<b>Pain intensity (mean score ± SD, VAS 0-10)</b>	<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
<b>Severe pain Intensity (VAS mean score ≥ 7) n (%)</b>	<i>All women</i>	<b>Women currently affected by dysmenorrhea whose pain intensity is ≥ 7</b> 655/1559 (42%)	<b>Women that had been affected in the past by dysmenorrhea whose pain intensity is ≥ 7</b> 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%)
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**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
<b>PHCS</b>	83.05±15.7	71.21±19.37	78.41±17.83	<0.001
<b>MHCS</b>	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