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1 Dysmenorrhea among 12-year-old teenagers from different socio-economic backgrounds.

2

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5

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26 Abstract

27 Purpose: The age of menarche has been gradually declining since the end of the 20th century.
28 Few studies have been carried out in Europe and they mainly included girls over the age of 15.

29

30 Methods: Observational study led among 6th grade school girls during the 2020 academic year
31 in 72 randomly selected public schools within a French region (approval number #20.94).

32

33 Results: Among 1712 girls interviewed, 257 had reached menarche. Eighty-three percent of
34 these teenagers displayed dysmenorrhea. Symptoms were reported to occur since the first
35 periods in 59% of them. School absenteeism was positively correlated to severe abdominal pain
36 ($p=0,001$). Two hundred and fifty-seven (23%) girls had reached their menarche. Median age
37 at menarche was 11 years (10,7-11,5). Periods lasted less than 3 days, 3 to 8 days and more
38 than 8 days in respectively 18%; 70% and 7% of teenagers. Symptoms were significantly more
39 frequent and more severe in urban group than in the countryside ($p=0,005$). Symptoms were:
40 abdominal pain (70%), fatigue (48%), difficulty in concentrating (26%), headache (25%),
41 digestive disorders (16%), breast discomfort (11%). 61% of dysmenorrheic teenagers are used
42 to take painkillers. 10% were uncomfortable despite them. Sport exemption was more frequent
43 in urban group ($p=0,003$) and among girls with severe abdominal pain ($p=0,001$).

44

45 Conclusions: Duration of menstrual cycle was similar between the socio-economic groups, but
46 symptoms and ways of coping were significantly different. Dysmenorrhea is definitely an
47 issue that has to be raised with teenagers as soon as the menarche occurred or even before. Easy
48 access to skilled health practitioners should be widespread.

49 Keywords: dysmenorrhea; young teenager; early onset of dysmenorrhea; risk factor for
50 dysmenorrhea; influence of socio-economic background; early menarche.

51 Highlights

52 What is known: Early menarche is correlated with severe dysmenorrhea

53 School absenteeism and limitation of physical activities are consequences of dysmenorrhea in

54 teenagers

55 What is new: Dysmenorrhea during the first year following menarche is as frequent and severe

56 as among adults

57 Ratings of abdominal pain, fatigue and trouble of concentration were more severe in urban girls

58 compared to the rural group.

59 Management of dysmenorrhea and other symptoms during periods was not relevant in 45% of

60 cases (subtherapeutic medication or metrorrhagia requiring medical counselling)

61

62

63 Abbreviation

64

65 MID mid-cities

66 NS not specified

67 PE priority education

68 RU rural

69 URB urban

70 W-B FPS Wong-Baker faces pain scale

71

72

73

74

75

76 Introduction

77

78 The age of menarche has been gradually declining since the 20th century by 3 months per
79 decade [1] but it currently seems to stabilize. Though, some countries report that this secular
80 trend is still ongoing [2]. The median and mean age of menarche was 12.8 years in France in
81 2010 according to the international Health Behaviour in School-aged Children study [3].
82 Dysmenorrhea is defined as painful menstruations. It is usually reported within 6 months after
83 menarche but some girls may experience dysmenorrhea from the very first periods (early
84 dysmenorrhea). In their review, Sanctis et al. compiled numerous reports on the impact of
85 dysmenorrhea on adolescent girls in developing countries (India, Middle East) [4]. Difficult
86 access to medication and school absenteeism are constant consequences in these countries. Few
87 studies have been carried out in Europe and they mainly concern girls over the age of 15 [5–7].
88 However, in 2008 Harel et al. [8] reported in a meta-analysis that the earlier the menarche, the
89 more severe the dysmenorrhea. Even more concerning is that the probability of dysmenorrhea,
90 whatever the intensity, is positively correlated with the precocity of the age of menarche [9]. In
91 France, most girls aged from 10 to 12 are in 6th grade. The aims of our study were thus to assess
92 the age of menarche among a large population of 6th grade girls and to investigate
93 dysmenorrhea, control of pain and impact on activities at school in adolescents from different
94 socio-economic groups.

95

96 Materiel and Methods

97

98 We led an observational study (DYSMENE Study) in collaboration with the school health
99 services of Brittany, France from September 2020 to June 2021. This study was approved by
100 the institutional review board of our University Medical Center (approval number #20.94) and

101 by the Educational Board of Academy of Brittany. Inclusion criteria were: menarcheal
102 teenagers, enrolled in 6th grade of public schools, who consented to the study. The
103 questionnaire was a 16-item form designed with age-adapted vocabulary. Characteristics of
104 menstrual cycles, frequency of symptoms and their intensity, impact on absenteeism and
105 physical activities were surveyed. Intensity of various symptoms was evaluated using the
106 Wong-Baker faces pain scale (W-B FPS). Early menarche was defined as an onset of periods
107 before 10 years old [3]. We considered absenteeism significant when school was missed
108 during periods more than 3 days over the last 3 months. In France, pupils enrolled for the first
109 year of secondary school (6th grade in France i.e. 11-12 years old) have a mandatory health
110 assessment during the running year. The size of the 10 to 12-year-old girls' cohort was
111 estimated according to Sanctis' study. Among the 11064 pupils encountered in the 6th grade
112 of public schools, we intended to target at least 3900 girls. We classified the schools
113 according to three categories of living environment using the definitions of the French
114 National Institute for Statistical and Economic studies (INSEE) [10] and considering the
115 different socio-professional categories of the parents reported by the Bureau of statistical
116 studies of the Board Academy of Brittany [11]. The categories defined as urban (URB), rural
117 (RU) and medium-sized cities (MID) depicted: mostly advantaged families in main cities with
118 a large access to general practitioners (GP), humble families in the countryside with limited
119 access to GP and advantaged families in medium cities with a large access to general
120 practitioners respectively. A fourth category was created for facilities in priority education
121 areas (PE). Institutions were randomly selected to meet the proportion of each category in the
122 whole Brittany. School nurses of selected schools were guided to conduct the assessment
123 interview thanks to an explanatory video. Parents and pupils received an information letter
124 and a consent form before health assessment and were asked to consent before filling in the
125 form.

126 Qualitative data are presented as number and percentage and quantitative data are presented
127 mean and standard deviation (SD). Analysis of variance (ANOVA) was used to compare the
128 quantitative variables and the Chi² test or Fisher's exact test, as appropriate, were used to
129 compare the qualitative variables between groups. All statistical tests have a significance level
130 of 0.05. Statistical analyses were performed using SAS software, v.9.4® (SAS Institute, Cary,
131 NC, USA). Only comparisons with significant results (p<0,05) are detailed below.

132

133 Results

134

135 **Figure 1** displays the flow-chart leading to selected girls for DYSMENE Study. Out of 1712
136 girls in 6th grade in Brittany, 381 had already reached menarche or got their first period during
137 the 6th grade of school (23%). Among these teenagers, 257 were questioned about their
138 menstruations and how they dealt with it. Mean age at the time of the study was 12 (0.4) years
139 old (12.08 (0.43), 12.09 (0.47), 12.17 (0.48), 12.01 (0.43) in URB, RUR, MID and PE
140 respectively). Schools from URB (13), RUR (12), MID (9) and PE (4) encompassed 80, 44,
141 102, 31 respectively.

142

143 Characteristics of the population

144 Girls originated from different socio-economic backgrounds. One girl reported being aware of
145 a gynecological condition but it was impossible to know which one precisely. Mean age at
146 menarche in each group (URB, RU, MID, PE) was respectively 11 (2); 11.1 (0.5); 11.1 (0.5);
147 11 (0.5) (p=0.8). Two nearby cities in the south of Brittany had the highest rate of teenagers
148 (63%). However, there was no statistical difference between this rate in North and South of
149 Brittany.

150

151 Characteristics of the menstrual cycle

152 The ratio of teenagers who had periods that lasted respectively less than 3 days, 3 to 8 days and
153 more than 8 days was respectively 18%, 70% and 7%. Five percent were not able to evaluate
154 duration of vaginal bleeding. 47% of teenagers were used to switch garments because of stains.
155 Feeling of insecurity was reported by 50.4 % of teenagers Teenagers from URB group were
156 less safe in school restrooms than their peers from the countryside (RU) ($p=0.01$). .

157 Complains during periods are summarized in **Tab. 1**. They were in order of frequency:
158 abdominal pain (70%), fatigue (48%), difficulty in concentrating (26%), headache (25%),
159 digestive disorders (16%), breast discomfort (11%). They were displayed by 214 teenagers
160 (83%) with significant differences between the groups for the four most common symptoms.
161 There was a statistical difference with a gradient from the rural population to the urban
162 population in the report of abdominal pain, fatigue, and difficulty to concentrate.

163 Looking at the intensity of each symptom (**Fig. 2**), light abdominal pain (0 to 3) was more
164 frequent in RU group compared to PE ($p=0.01$) and URB groups ($p=0.04$).

165 Out of 214 teenagers suffering from dysmenorrhea, 137 (64%) took painkillers. Among them,
166 93 used also non-pharmaceutical therapies (NPT). Paracetamol was used alone in 41(31%)
167 cases and combined with phloroglucinol and NSAIDs in respectively 51(38%) and 2 (1%)
168 cases. Phloroglucinol and NSAIDs were used alone in 32 (24%) and 8 (6%) cases respectively.
169 One girl was on the pill and took no painkillers. Medication concerned 54 (68%), 15 (35%), 49
170 (47%), 19 (61%) teenagers respectively from URB, RUR, MID an PE ($p<0.02$). URB and PE
171 teenagers were more likely to take medicines than RUR ones. Dual therapy (paracetamol +
172 phloroglucinol) was used by 40% (22/54) of URB teenagers. NPT was used alone in 26 cases
173 (13% of dysmenorrhic teenagers). We identified 2 main manners reported to relieve pain: heat
174 (hot-water bag, hot shower, hot drinks) in 72 cases and position in 27 cases (decubitus position,
175 fetal position, walking). These remedies were combined in 15 teenagers. Nothing was done in

176 19% of dysmenorrheic teenagers (37 cases) but fatigue or trouble in concentration was the only
177 symptom reported in 6 cases. However, abdominal pain was left untreated in 15% of
178 dysmenorrheic teenagers. Among the 31 teenagers concerned, 13 were suffering from
179 abdominal pain and at least another symptom. Complain from discomfort in spite of medication
180 and NPT was reported by 22 girls (10% of dysmenorrheic teenagers). Medication alone was
181 not sufficient for 8 teenagers (4% of dysmenorrheic teenagers). Five girls (2%) without any
182 therapy including 3 cases of moderate to severe abdominal pain declared unsatisfied.

183

184 Early dysmenorrhea

185 Dysmenorrhea started at the first menstruations in 109 girls (51%) with 51 (%) in URB, 12 (%)
186 in RU, 37 (%) in MID and 9 (%) in PE ($p<0.02$). Teenagers from URB group were more subject
187 to early dysmenorrhea compared to PE group ($p<0.05$). Grading of pain was similar between
188 the teenagers who suffered from early dysmenorrhea and those who experienced symptoms
189 later. Similarly, there was no difference in the use of medication. Early menarche was not
190 identified as a risk factor of early dysmenorrhea. Among these girls, 29 (26%) did not take any
191 medication but 10 use NPT. Thus, 17% of this population was untreated. Relief after medication
192 and/or NPT was achieved more often in early dysmenorrheic teenagers than the rest of the
193 dysmenorrheic teenagers population (80 vs 65 %, $p<0.004$): 17 declared being uncomfortable
194 and 10 were not able to assert an answer.

195

196 Impact during scholarship (**Tab. 2**)

197 Ten teenagers (4%) missed between 3 and 5 school days and 8 (3%) more than five days over
198 the past 3 months. Forty-one teenagers (16%) missed sports session when periods occurred in
199 the same time. Eleven teenagers out of 183 (6%) foresaw dysmenorrhea as a disadvantage for
200 some professional careers. Two teenagers specified that physical jobs would not be an option.

201 The first one reached menarche at 11 with periods lasting more than 8 days and was suffering
202 from moderate abdominal pain, digestive disorders, fatigue and trouble in concentration. The
203 other one reached menarche at 10 years old and was suffering from severe abdominal pain,
204 fatigue and digestive disorders. Absenteeism was 3 times higher among teenagers suffering
205 from severe abdominal pain ($p<0.001$). Insecurity in restrooms ($p<0,03$) and severe abdominal
206 pain ($p<0,01$) were risk factors for missing sport every other time. Pupils from URB and MID
207 groups were more likely to have sport exemption ($p<0.05$). Early dysmenorrhea, menarche
208 before 10 years old, use of medication or NPT did not have any link with absenteeism, sports
209 exemption or vision of dysmenorrhea as a disability in a professional career.

210 Characteristics of early menarche (before 10 years old)

211 No significant differences were remarkable between girls who reached menarche under 10
212 years old of age (<10) and those at 10 years old or after (≥ 10) concerning, the precocity of
213 dysmenorrhea: 48% (<10) and 61% (≥ 10) ($p=0.2$), the use of medication : 64% (<10) and
214 69% (≥ 10) ($p=0.5$), the abdominal pain : 79% (<10) and 68% (≥ 10) ($p=0.2$) and its intensity
215 : 27% reported severe pain(<10) versus 20% (<10) ($p=0.3$).

216

217 Discussion

218

219 This is the first study on dysmenorrhea in Brittany classifying teenagers with socioeconomic
220 background. Our rationale to perform the study was that the literature was scarce about
221 dysmenorrheal symptoms and their drawbacks on scholarship in young teenagers around
222 menarche. We thus interviewed 257 menorrheal teenagers among 38 schools randomly chosen
223 in Brittany. It showed that there were differences between the 4 areas (URB, RUR, MID, PE)
224 in reporting symptoms, medication and impact on scholarship.

225 Health assessment at age 12 is a legal obligation in public schools in France. Key topics of this
226 interview in girls are periods and dysmenorrhea, physical activities, nutrition and hygiene.
227 Thinking that one of the major biases in the studies concerning dysmenorrhea among young
228 teenagers is voluntary response survey, we chose to work in collaboration with the Education
229 Board of the Academy of Brittany. Indeed, lack of interest from girls or what is considered as
230 a taboo subject by parents may restrict teenagers' participation. In order to avoid this, we
231 inquired the nurses to ask and explain if necessary the questions and fulfill the questionnaire.
232 Except from the questions about awareness of a genital condition and how they foresee a
233 professional career with dysmenorrhea, all the enquiries were usually asked during this medical
234 assessment to 6th grade teenagers. Though, we could not retrieve data from 62 girls because of
235 parents' disagreement, but our major loss of data was due to the COVID-pandemic which did
236 not enable nurses to meet the pupils. PE schools were mainly settled in the capital cities of the
237 four districts of Brittany (3/4 schools). The study began in September 2020 and ended in June
238 2021 with major feedbacks in February. That means that the figure of 23% of girls who reached
239 their menarche is a very minimum. It appeared that socio-economic background had no impact
240 on physiological characteristics of the menstrual cycle (age of menarche, length of periods,
241 amount of bleeding). It is interesting to notice that significant differences concerned symptoms
242 that are known to often bear a psychological component. Whereas, there were no differences
243 concerning organic symptoms such as breast discomfort (due to estrogen causing enlargement
244 of mammary gland duct) or digestive disorders (prostaglandins trigger uterus muscle to expel
245 blood but increase also bowel movement). Dysmenorrhea occurred more among teenagers from
246 large urban areas and is more severe. But it was less obvious in PE group. Even fatigue was
247 significantly less displayed by PE teenagers compared to their URB peers who go to schools a
248 few miles away from their own. It appears that surroundings may not play a major role in
249 dysmenorrhea. Medication was more used in URB and PE group. We suggested that it was

250 positively correlated with dysmenorrhea but also because access to medical advice is also easier
251 in comparison with RUR areas due to the shortage of rural physicians in France. MID group
252 had a similar ratio of light/moderate/severe abdominal pain as PE group (NS). Though, less
253 medication was used. Through our experience, paracetamol and phloroglucinol are preferred
254 prescription from general practitioner against dysmenorrhea. NSAIDs are usually used as
255 second-line therapy. We did not perform an analysis of the different molecules used in each
256 group because the number of these over-the-counter drugs was too limited to show any
257 difference of prescription or self-medication. Missing school was directly correlated to severe
258 abdominal pain which is logical. Schools in urban and mid-size areas are often large facilities.
259 Restrooms may be less clean than in smaller buildings. That could explain why there was a
260 significant difference between these areas and PE or RUR groups. As for the lower report of
261 fatigue in PE group, we suggested that cultural background (underprivileged children, recent
262 immigrated families, low level of education) could explain why these girls are trained to
263 override pain. Others issues in RUR group could play a part: harsher living conditions, families
264 of farmers or sailors, daily physical activities. Seventeen teenagers were missing sports only
265 when it was swimming lessons. Besides, we were confused about many paradoxical answers
266 from RUR teenagers who rated their pain high and used no medication without missing school
267 or sports. After the statistical analysis for the DYSMENE study, we also reviewed the
268 questionnaire one by one to evaluate the number of teenagers who could benefit from a medical
269 management. We assessed that 97 teenagers did not have relevant behaviors in the use of
270 medication. Eighteen of them could have been eligible to an education program (for example
271 they took no medication nor even used NPT while they avoided physical activities), 62 deserved
272 a health support (they implemented means to relieve pain but it was not optimal and they missed
273 school), 17 should have an acute assessment of their bleeding loss (they had periods lasting
274 more than a week with severe fatigue and/or absenteeism).

275 As in our study, Canadians proved that age at menarche was not linked to the place of residence
276 [12]. Recent studies about median age at menarche showed that it is not that different from one
277 country to another: 12 years old in Malaysia to 12.6 in Chile [13–15]. Armour et al. [16]
278 estimated from a meta-analysis in 2019 that 72% of teenagers (before university) were suffering
279 from dysmenorrhea worldwide. In this study, dysmenorrhea was defined by only 4 symptoms
280 (bloating, emotional changes, fatigue, breast tenderness) but digestive disorders, headache and
281 trouble in concentration were often associated with abdominal pain in our study. It implies that
282 teenagers from our cohort had truly a higher rate of dysmenorrhea (83%). We did not find a
283 significant association between dysmenorrhea and age at menarche or length of bleeding as it
284 is reported in adults [17,18]. Hoppenbrouwers et al.[9] studied a 1-year-older population (152
285 teenagers) than our cohort and still, also found that early menarche teenagers were more likely
286 to suffer from dysmenorrhea. We suggested that either the younger part of our cohort (<10
287 years of age) was not aware of the topic and did not notice that there was a link with
288 menstruations, or the menarche occurred for the other part just a few months before the study
289 leading to an over-declaration because of recent memories. It is admitted that primary
290 dysmenorrhea does not occur with the first periods but after 6 months because they correspond
291 to anovulatory cycles [19]. This concept is widespread among the medical community but we
292 realized that it was anchored among school nurses that primary dysmenorrhea was a matter of
293 years. Indeed, all the nurses with no exception let us know before beginning the study that we
294 would obtain scarce response for this reason. But 32 teenagers out of 109 with early
295 dysmenorrhea (30%) had menarche less than 6 months before when they answered the
296 questionnaire. In adults, it is widely reported that higher rates of dysmenorrhea are detected if
297 the study is conducted at a physician's rather than with another design [20]. Iacovides et al. [21]
298 highlighted the stakes of treating primary dysmenorrhea: diminishing the noxious input into
299 central nervous system, avoid chronic pain conditions, decrease the risk of fibromyalgia. We

300 found that early dysmenorrhea is all so easier to relieve. That is why a huge benefit for girls
301 could be expected if school nurses but also health practitioners early enquired about
302 dysmenorrhea. Educating girls even before the menarche may also enable teenagers to learn
303 and identify symptoms of dysmenorrhea particularly suspicious pain. If reported to medical
304 staff, this could lead to earlier diagnose genital outflow tract obstruction. The early management
305 of malformation of the genital tract such as imperforate hymen can avoid developing
306 endometriosis [22]. Endometriosis in adolescents must be mentioned after 3-6 months of
307 ineffective treatment of dysmenorrhea [23]. Adolescence may be the time of life during which
308 dysmenorrhea management is the less effective. If medication is used, it is often subtherapeutic
309 [24]. Few teenagers took NSAIDs whereas it is recommended as first-line therapy [25]. France
310 is not a pioneer in matter of sexual education of children [26]. But as long as better information
311 will not be spread to girls from the younger age, we would still have to regret that women with
312 dysmenorrhea suffer from a poorer quality of life [27].

313

314 The DYSMENE Study is a premiere in the field of dysmenorrhea among adolescents. This
315 study highlighted that dysmenorrhea is very frequent in the first years after menarche (83%).
316 Education of family physicians, school nurses, girls and their parents must be improved in
317 France.

318 The authors disclosed no conflicts of interest.

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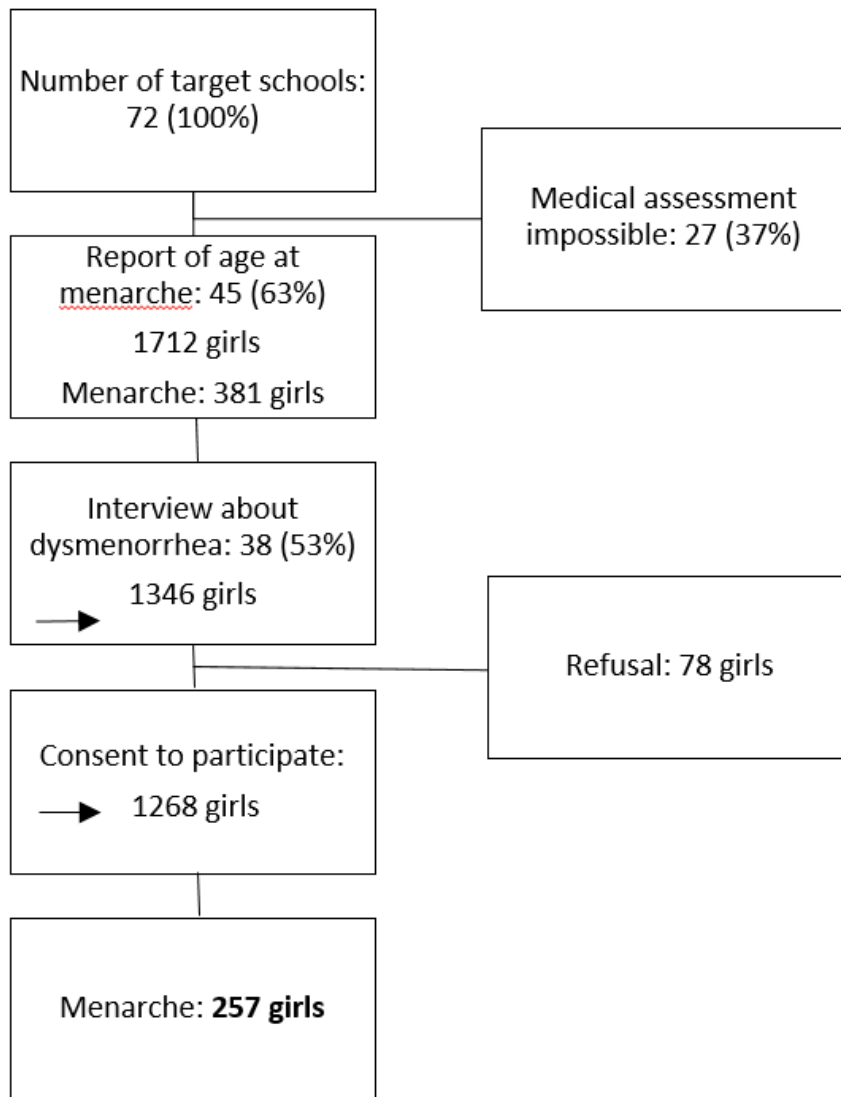
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403 Figures and tables
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Fig. 1: Flow-chart of the DYSMENE Study. Medical assessment was sometimes impossible because of SARS-CoV-2 Pandemic.

| | URB n=80 | RUR n=44 | MID n=102 | PE n=31 | TOTAL n=257 | p |
|-----------------------------|---------------------|--------------------|---------------------|-------------------|-----------------------|----------|
| Abdominal pain | 69 (39%) (87%) | 28 (16%) (65%) | 60 (33%) (59%) | 22 (12%) (71%) | 179 (100%) | = 0.0005 |
| Headache | 30 (46%) (38%) | 7 (11%) (16%) | 22 (34%) (22%) | 6 (9%) (19%) | 65 (100%) | = 0.0199 |
| Breast discomfort | 14 (52%) (18%) | 3 (11%) (7%) | 7 (26%) (7%) | 3 (11%) (10%) | 27 (100%) | = 0.117 |
| Difficulties to concentrate | 32 (48%) (40%) | 4 (6%) (9%) | 23 (35%) (22%) | 7 (11%) (23%) | 66 (100%) | = 0.0013 |
| Digestive disorders | 16 (39%) (20%) | 3 (7%) (7%) | 18 (44%) (18%) | 4 (10%) (13%) | 41 (100%) | = 0.2455 |
| Fatigue | 51 (41.5%) (65%) | 10 (8%) (23%) | 51 (41.5%) (50%) | 11 (9%) (35%) | 123 (100%) | < 0.0001 |

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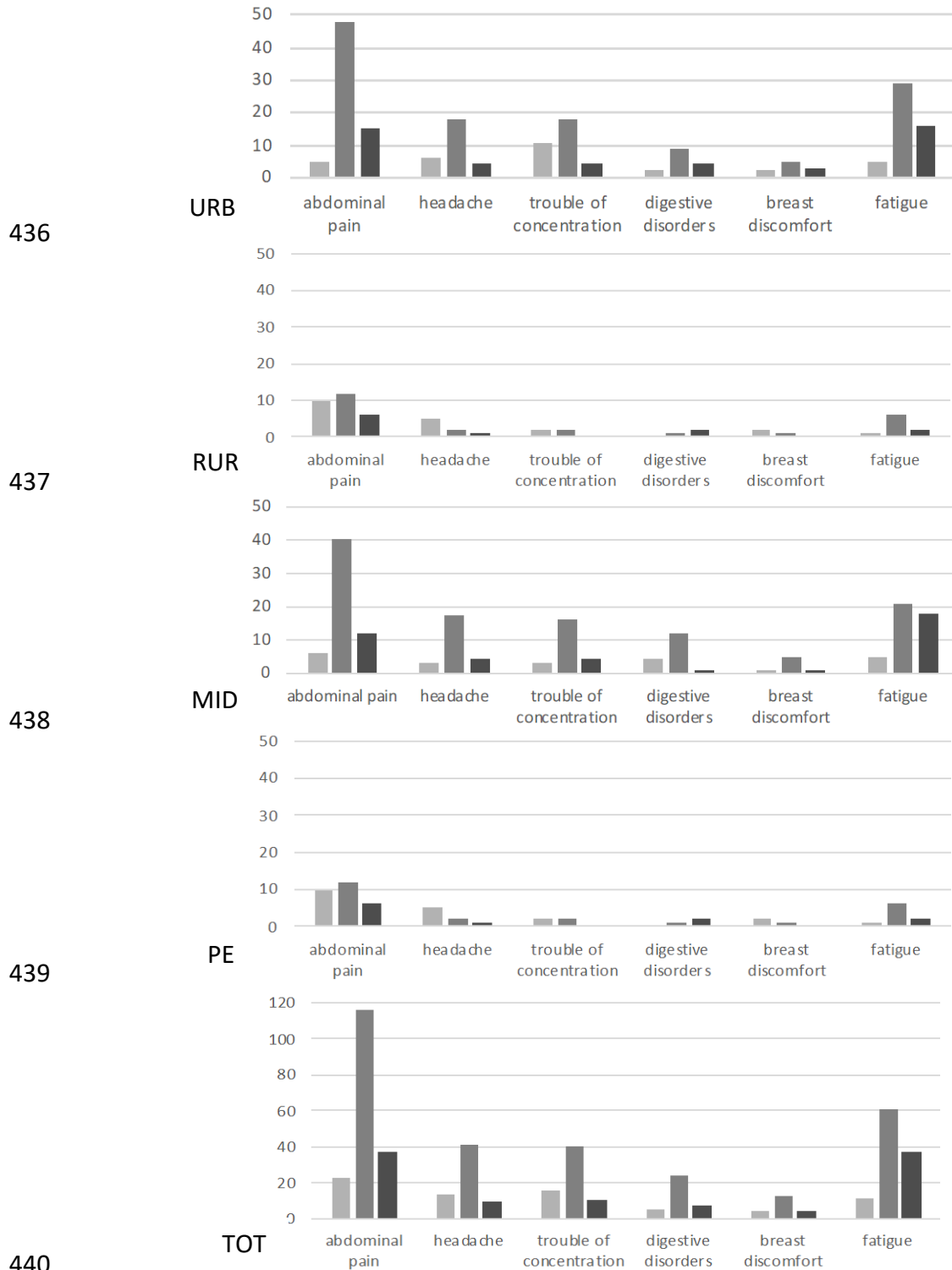
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Tab. 1 Symptoms of dysmenorrhea among menarcheal teenagers depending on the living areas (urban (URB), rural (RUR), mid-cities (MID) and priority education (PE) areas). First percentage accounts for the rate of patients from one area experiencing the symptom. Second percentage accounts for the rate of teenagers displaying the symptom in each area. p-value only concerns the comparison between the four areas.



440 **Fig. 2:** Distribution of intensity of each symptom rated as light, moderate or severe (respectively
 441 $0 < W-B \text{ FPS} \leq 3$; $4 \leq W-B \text{ FPS} \leq 7$; $W-B \text{ FPS} \geq 8$) reported from teenagers belonging to URB,
 442 RUR, MID and PE. TOT: concerns total number of teenagers.
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| | | URB n= 80 (100%) | RUR n=44 (100%) | MID n=102 (100%) | PE n=31 (100%) | Total n=257 (100%) | p |
|------------------------------|-------------------------|------------------------|-----------------------|------------------------|----------------------|--------------------------|------|
| School absenteeism | never or less than 3 d. | 56 (36%) (70%) | 26 (17%) (59%) | 54 (34%) (53%) | 21 (13%) (68%) | 157 (100%) (61%) | 0.16 |
| | 3 to 5 d. | 5 (50%) (6%) | 4 (40%) (9%) | 0 (0%) (0%) | 1 (10%) (1%) | 10 (100%) (4%) | |
| | more than 5 days | 4 (50%) (5%) | 1 (12%) (2%) | 3 (38%) (3%) | 0 (0%) (0%) | 8 (100%) (3%) | |
| | no answer | 15 (19%) (19%) | 13 (16%) (30%) | 45 (54%) (44%) | 9 (11%) (31%) | 82(100%) (32%) | |
| Missing sports | every period | 18 (44%) (22%) | 2 (5%) (4%) | 15 (36%) (15%) | 6 (15%) (19%) | 41(100%) (16%) | 0.26 |
| | < 6 times a year | 10 (59%) (12%) | 2 (12%) (4%) | 5 (29%) (5%) | 0 (0%) (0%) | 17 (100%) (7%) | |
| | ≥ 6 times a year | 13 (37%) (16%) | 5 (14%) (12%) | 13 (37%) (13%) | 4 (12%) (13%) | 35 (100%) (13%) | |
| | never | 24 (29%) (30%) | 20 (25%) (46%) | 27 (33%) (26%) | 11 (13%) (35%) | 82 (100%) (32%) | |
| | no answer | 15 (18%) (20%) | 15 (38%) (34%) | 42 (51%) (41%) | 10 (12%) (33%) | 82 (100%) (32%) | |
| Dysmenorrhea as a disability | yes | 8 (73%) (10%) | 0 (0%) (0%) | 2 (18%) (2%) | 1 (9%) (3%) | 11 (100%) (4%) | 0.06 |
| | no | 59 (34%) (74%) | 34 (20%) (77%) | 58 (34%) (57%) | 21 (12%) (68%) | 172 (100%) (67%) | |
| | no answer | 13 (17%) (16%) | 10 (14%) (23%) | 42 (57%) (41%) | 9 (12%) (29%) | 74 (100%) (29%) | |

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Tab. 2 Impact of dysmenorrhea on school absenteeism, limitation of physical activities and vision of living a professional career with symptoms. First percentage accounts for the rate of patients concerned in the corresponding area. Second percentage accounts for the rate of answers in a given area (head of column). p-value only concerns the comparison between the four area.