Dysmenorrhea ou les règles douloureuses n’est pas mortelle, mais elle est la plupart du temps débilitante et psychologiquement éprouvante pour les femmes. Cette première étude vise à souligner les aspects épidémiologiques, cliniques et thérapeutiques ainsi que l’impact social, l’attitude, la conscience et la connaissance du traitement chez les étudiantes et élèves (Province du Sud / Rwanda). En outre, quelques autres caractéristiques menstruelles ont été relevées chez les dysménorrhéiques et non dysménorrhéiques. Il s’agit d’une étude transversale, descriptive et analytique. La population étudiée est constituée par deux groupes interviewés au cours de deux enquêtes menées conjointement: (1) 466 étudiantes de l’Université Nationale du Rwanda qui avaient accepté de participer à l’enquête et de répondre au questionnaire; (2) 423 adolescentes et jeunes filles des pensionnats de la ville de Nyanza (77 d’entre elles avaient été exclues à cause des questionnaires incomplets). Dysmenorrhea était considérée comme une réalité dans notre environnement et n’avait pas d’impact social majeur. Les résultats obtenus au cours de cette étude peuvent servir de base pour une future étude plus approfondie.
Dysmenorrhea and other Menstrual Characteristics

% vs 24.5%; p = 0.000; RR = 1.92 [1.58 – 2.33]); (22) somnolence (22.8% vs 40.8%; p = 0.000; RR = 0.51 [0.41 – 0.63]); (23) troubles du comportement (37.3% vs 12.5%; p = 0.000; RR = 2.98 [2.26 – 3.93]). En conclusion, la dysménorrhée est plus fréquente et sa durée plus longue chez les adolescentes et jeunes filles des écoles secondaires que chez les étudiantes dans la partie méridionale du Rwanda. Elle représente un vrai problème de santé publique se traduisant par un taux élevé d’absentéisme et d’inactivité, des examens manqués, voire des cas d’hospitalisation ; cet impact négatif ainsi que la plupart des symptômes désagréables sont significativement plus retrouvés chez les élèves de l’école secondaire que chez les étudiantes de l’université. Une campagne d’information s’impose en vue de minimiser l’absence de prise de conscience du traitement et le niveau de résignation. L’âge de la ménarche et les autres caractéristiques menstruelles se situent dans les limites observées ailleurs dans le monde, sauf que la prévalence de la puberté précoce est deux fois inférieure dans notre série. En plus, il est recommandé de réaliser des enquêtes similaires dans d’autres régions du Rwanda.

Mots Clés: Dysménorrhée – Menstruation – Etudiantes – Adolescentes - Rwanda

INTRODUCTION

Dysmenorrhea refers to difficult menstrual flow or the syndrome of painful menstruation. The term dysmenorrhea derives from the Greek words δύσ (dys, meaning difficult, painful, abnormal), μήν (mén, meaning month), and ρρρρ (rrhein, meaning to flow) [1, 2]. Primary dysmenorrhea is not associated with macroscopic pelvic pathology, and usually begins within the first 6 months or occurs in the first few years after menarche once a regular ovulatory cycle has been established, whereas secondary dysmenorrhea may present at any time after menarche, results from anatomic and / or macroscopic pelvic pathology, and commonly arises when a woman is in her 20s or 30s, after years of normal, relatively painless cycles [3 - 5]. This first study aims to bring out epidemiological, clinical, and therapeutic aspects, as well as social impacts, attitudes, awareness and knowledge of treatment in dysmenorrheic female students and adolescents in our environment (Southern Province of Rwanda). Moreover, some menstrual characteristics were also looked for in the whole study population (dysmenorrheic and non dysmenorrheic participants).

METHODOLOGY

This cross-sectional, descriptive, and analytical study results from two surveys realized in the framework of MD dissertations jointly supervised and presented in 2007 through the National University of Rwanda Department of Obstetrics and Gynecology [6, 7]. Data from these surveys were then partly and per se analyzed, i.e. without reference to the other survey. This study is rather a combined descriptive and analytical exercise in order to make a comparison between students and schoolgirls. The study population consisted of two groups relating to abovementioned surveys: (1) 466 female students (National University of Rwanda or NUR, Huye) who accepted to participate in the survey and answered the appropriate questionnaire; (2) 423 consenting schoolgirls from Nyanza boarding high schools (77 teenagers were excluded from the survey because of incomplete questionnaires). The calculated size on the basis of unknown dysmenorrhea prevalence was 384.16. Dysmenorrhea was considered as a whole without distinction between primary and secondary dysmenorrhea.

The following parameters were considered: age, first menstrual period, menstrual flow characteristics (duration and amount), clinical symptoms and signs, impact on daily activities, evolution, management, awareness and knowledge of the treatment.

RESULTS

DEMOGRAPHIC AND MENSTRUAL CHARACTERISTICS

Demographic and menstrual characteristics in female students of National University of Rwanda and Nyanza schoolgirls are shown in table I. There is a highly significant difference about average age, menstruation duration (> 3 days) as well as menstrual flow abundance (polyamenorrhea), and no difference about menarche onset.
**Table I.** Demographic and menstrual characteristics in female University students and Nyanza schoolgirls.

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>STUDENTS (N = 466)</th>
<th>SCHOOLGIRLS (N = 423)</th>
<th>p</th>
<th>RR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age</td>
<td>23.7 ± 2.8 years</td>
<td>19.8 ± 2.9 years</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menarche between 12 and 16 years</td>
<td>85.4 %</td>
<td>85.5 %</td>
<td>0.94</td>
<td>RR = 1 [0.95 – 1.05]</td>
<td></td>
</tr>
<tr>
<td>Average age at menarche</td>
<td>14.4 ± 1.7 years</td>
<td>14.5 ± 1.9 years</td>
<td>NS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menarche duration &gt;3 days</td>
<td>56.7 %</td>
<td>44.7 %</td>
<td>0.000</td>
<td>RR = 1.27 [1.11 – 1.45]</td>
<td></td>
</tr>
<tr>
<td>Menarche &lt;12 years</td>
<td>5.8 %</td>
<td>5.6 %</td>
<td>0.56</td>
<td>R = 1.13 [0.75 – 1.70]</td>
<td></td>
</tr>
<tr>
<td>Menarche &gt;16 years</td>
<td>9.8 %</td>
<td>8.7 %</td>
<td>0.56</td>
<td>RR = 1.13 [0.75 – 1.70]</td>
<td></td>
</tr>
<tr>
<td>Menstrual flow abundant</td>
<td>19.7 %</td>
<td>33.8 %</td>
<td>0.000</td>
<td>RR = 0.58 [0.47 – 0.73]</td>
<td></td>
</tr>
</tbody>
</table>

**ADDITIONAL MENSTRUAL SIGNS AND SYMPTOMS**

Apart from pain in the pelvic area (the main dysmenorrhea symptom), table II displays additional menstrual symptoms / signs in students and schoolgirls. Except for diarrhea, malaise and behavior problems, all other symptoms and signs are significantly more frequent in schoolgirls than in female university students. The occurrence of the following symptoms / signs was insignificant (0.2 – 1.8 %): anorexia, thirst, dizziness, constipation, insomnia, blurred vision, apathy, tachycardia, palpitations, common cold syndrome, and perineal pain.
### Dysmenorrhea And other Menstrual Characteristics

**Table II.** Additional menstrual signs and symptoms in female students of National University of Rwanda and Nyanza schoolgirls.

<table>
<thead>
<tr>
<th>SIGNS / SYMPTOMS</th>
<th>STUDENTS (N = 466)</th>
<th>SCHOOLGIRLS (N = 423)</th>
<th>P</th>
<th>RR</th>
<th>95 % CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>34.5 %</td>
<td>55.3 %</td>
<td>0.000</td>
<td>RR = 0.62</td>
<td>[0.54 – 0.73]</td>
</tr>
<tr>
<td>Backache</td>
<td>67.8 %</td>
<td>84.8 %</td>
<td>0.000</td>
<td>RR = 0.80</td>
<td>[0.74 – 0.86]</td>
</tr>
<tr>
<td>Nausea</td>
<td>32.2 %</td>
<td>38.7 %</td>
<td>0.04</td>
<td>RR = 0.83</td>
<td>[0.69 – 0.99]</td>
</tr>
<tr>
<td>Vomiting</td>
<td>17.6 %</td>
<td>31.6 %</td>
<td>0.000</td>
<td>RR = 0.56</td>
<td>[0.44 – 0.71]</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>37.8 %</td>
<td>25.5 %</td>
<td>0.000</td>
<td>RR = 1.48</td>
<td>[1.21 – 1.81]</td>
</tr>
<tr>
<td>Malaise</td>
<td>47.2 %</td>
<td>24.5 %</td>
<td>0.000</td>
<td>RR = 1.92</td>
<td>[1.58 – 2.33]</td>
</tr>
<tr>
<td>Somnolence</td>
<td>20.8 %</td>
<td>40.8 %</td>
<td>0.000</td>
<td>RR = 0.51</td>
<td>[0.41 – 0.63]</td>
</tr>
<tr>
<td>Tiredness</td>
<td>61.4 %</td>
<td>78 %</td>
<td>0.000</td>
<td>RR = 0.79</td>
<td>[0.72 – 0.86]</td>
</tr>
<tr>
<td>Breast ache</td>
<td>61.4 %</td>
<td>71.1 %</td>
<td>0.002</td>
<td>RR = 0.86</td>
<td>[0.78 – 0.95]</td>
</tr>
<tr>
<td>Behavior problems</td>
<td>37.3 %</td>
<td>12.5 %</td>
<td>0.000</td>
<td>RR = 2.98</td>
<td>[2.26 – 3.93]</td>
</tr>
</tbody>
</table>
The prevalence of dysmenorrhea was 77.3% (360 / 466) in National University of Rwanda female students and 85.6% (362 / 423) in schoolgirls from Nyanza boarding high schools (p = 0.001; RR = 0.90 [0.85 – 0.96]).

DYSMENORRHEA DURATION AND INACTIVITY
Pain was felt for more than 3 days in 21.1% of students (n = 360) and 39.5% of schoolgirls (n = 362) respectively (p = 0.000; RR = 0.46 [0.36 – 0.58]). Inactivity was respectively noticed in 63.9% of students and 58% of schoolgirls (p = 0.105; RR = 1.10 [0.98 – 1.24]). This inactivity exceeded 3 days in 16.4% of students and 41.1% of schoolgirls (p = 0.000; RR = 0.36 [0.27 – 0.46]).

DYSMENORRHEA, ABSENTEEISM, AND MISSED EXAMS
Academic and school absenteeism was registered in 60.5% and 61% of cases respectively (p = 0.891; RR = 0.99 [0.88 – 1.12]). Missed exams were reported by 11.6% of students and 39.5% of schoolgirls with dysmenorrhea (p = 0.000; RR = 0.30 [0.22 – 0.40]).

DYSMENORRHEA DEVELOPMENT
The following figures were respectively reported by students and schoolgirls: unpredictable (58.9% vs 52.5%; p = 0.000; RR = 1.32 [1.15 – 1.53]), increasing (15.8% vs 21.7%; p = 0.001; RR = 0.62 [0.46 – 0.84]), decreasing (7.2% vs 20.6%; p = 0.000; RR = 0.30 [0.20 – 0.45]), vanished (0.3% vs 1.6%; p = 0.037; RR = 0.13 [0.02 – 1]), and not specified (18.4% vs 3.6%; p = 0.000; RR = 4.60 [2.63 – 8.04]).

DYSMENORRHEA AND PATIENTS’ BEHAVIOUR
The following attitudes at the time of dysmenorrhea onset were reported by students and schoolgirls: purchase of drugs or self-medication (31.1% vs 23.2%; p = 0.169; RR = 1.34 [1.05 – 1.71]), medical consultation (20.8% vs 17.4%; p = 0.241; RR = 1.20 [0.89 – 1.62]), and wait-and-see attitude (48.1% vs 59.4%; p = 0.002; RR = 0.81 [0.71 – 0.93]).

DYSMENORRHEA AND MEDICAL TREATMENT
At the health center / hospital, most of students (71 / 75, i.e. 94.7%) versus 52.4% of schoolgirls (33 / 63) received an ambulatory medical treatment (p = 0.000; RR = 1.81 [1.42 – 2.30]). Only 5.3% of students versus 46% of schoolgirls were once hospitalized (p = 0.000; RR = 0.17 [0.06 – 0.46]). One schoolgirl (1.6%) has even been operated.
Dysmenorrhea and other Menstrual Characteristics

In our study population, dysmenorrhea duration in schoolgirls was significantly longer than in students. This discovery should not be alarming because an average duration of menstrual flow exceeding 4 to 5 days is reported worldwide [20, 21].

In conclusion, dysmenorrhea is significantly more frequent and its duration more long in schoolgirls than in female students in the southern part of Rwanda. It represents on the whole a real public health issue resulting in a high rate of absenteeism, inactivity, missed exams, and even hospitalization; this negative impact and most of the unpleasant symptoms are significantly more frequent in schoolgirls than in female students. An information campaign is needed to alleviate the lack of treatment awareness as well as the high rate of resignation. Age at menarche and other menstrual characteristics are within the range of what is observed worldwide, except that precocious puberty is twice less frequent. Besides, we suggest that other surveys are carried out in other parts of Rwanda.

REFERENCES


the central nervous system [3]. Dysmenorrhea duration in our study population was mostly focused on the first 3 days of menstruation (79 % of students and 60 % of schoolgirls).

As for behavior when facing up to dysmenorrhea, we have on the whole registered appreciable numbers of self-medication as well as resignation in the ratio of almost one to four and one to two respectively. The self-medication rate in our study is lower than the one (64.9 %) observed in a Mexican population [12]. The high level of resignation rate (around 50 % and 60 % of cases respectively) in our study population is striking, especially when one knows how health insurance coverage is almost total in Rwanda. This should not be due to ignorance, but certainly to a cultural background: Rwandan women’ capacity for enduring pain is admirable, even in labor rooms unlike other African women!

The hospitalization rate is significantly higher in schoolgirls than in students who are the most aware of medical treatment in our study. Analgesics and nonsteroidal anti-inflammatory drugs are the most used, followed by antispasmodics and a long way off by aspirin.

Dysmenorrhea development in our study population does not show a clear trend towards alleviation. This is comprehensive taking into account the age and marital status of most of our participants, as dysmenorrhea incidence, prevalence, and severity fall with increasing age and increasing parity [2, 15 - 17]. However, age effect can be supported by the significantly lower dysmenorrhea prevalence in female students in comparison with schoolgirls in our study population.

Among clinical features reported by participants regardless of dysmenorrhea type are general symptoms that may be present with primary dysmenorrhea: malaise, fatigue, nausea and vomiting, diarrhea, lower backache, and headache [2].

Apart from signs and symptoms, other menstrual characteristics consisted of age at menarche and menstrual flow. The menarche took place between 12 and 16 years for 85 % of participants, the average age being mutatis mutandis 14 ± 2 years. An analysis of data from the Third National Health and Nutrition Examination Survey reported that 90 % of all US girls were menstruating by 13.75 years of age, with a median age of 12.43 years, although non-Hispanic black girls menstruated significantly earlier than non-Hispanic white and Mexican American girls [18]. Another survey in 10 British towns showed that the median menarcheal age was 12 years 11 months (95 % CI: 12 years 10 months to 13 years 1 month), with 21.7 % of girls reporting having had their first period by 12th birthdays and 11.8 % before leaving primary school [19]; and this is double the rate observed in female university students (5.8 %) and schoolgirls (5.6 %) in our study population.

The menstruation duration exceeded 3 days in half of the participants in our study population; it was more abundant in schoolgirls than in students. This discovery should not be alarming because an average duration of menstrual flow exceeding 4 to 5 days is reported worldwide [20, 21].

In conclusion, dysmenorrhea is significantly more frequent and its duration more long in schoolgirls than in female students in the southern part of Rwanda. It represents on the whole a real public health issue resulting in a high rate of absenteeism, inactivity, missed exams, and even hospitalization; this negative impact and most of the unpleasant symptoms are significantly more frequent in schoolgirls than in female students. An information campaign is needed to alleviate the lack of treatment awareness as well as the high rate of resignation. Age at menarche and other menstrual characteristics are within the range of what is observed worldwide, except that precocious puberty is twice less frequent. Besides, we suggest that other surveys are carried out in other parts of Rwanda.
Dysmenorrhea And other Menstrual Characteristics


