

Title: Primary Dysmenorrhea: Associated Symptoms, Impact and Management among Females in the Menoua Division of the West Region of Cameroon. Cross-sectional Study

Running Title: Primary Dysmenorrhea in the Menoua Division

Nadine Sylvie Ongbayokolak^a, Solange Dabou^b, Flavie Gaelle Djoueu^c,
Cerge Natheu Kamhoua^d, Landry Lienou Lienou^e, Sylvain Njina Nguedia^f,
Gildas Mbemya Tetaping^g, Joseph Bilim Bee^h, Ousenu Karimoⁱ, Bruno
Kenfack^j, Phelix Bruno Telefo^{k*}

^{a,b,d,e,f,k}*Department of Biochemistry, Faculty of Sciences, Biochemistry research unit of medicinal plants, Food Science and Nutrition. University of Dschang, P.O. Box 67, Dschang, Cameroon*

^{c,i}*Department of Biochemistry, Faculty of Sciences, Biochemistry research unit of microbiology and anti-microbiological substances, University of Dschang, P.O. Box 67, Dschang, Cameroon*

^g*Faculty of Veterinary Medicine, Laboratory of Manipulation of Oocytes and Preantral Follicles (LAMOFOPA), State University of Ceará, Fortaleza, CE, Brazil*

^h*Health service at university of Dschang, P.O. Box 96 Dschang, Cameroon*

^j*Department of clinical science, faculty of medicine and pharmaceutical sciences, University of Dschang, P.O. Box 43, Dschang, Cameroon*

^k*Email: bphelix@yahoo.co.uk*

^a*Email: nongbayokolak@yahoo.fr*

Abstract

Primary dysmenorrhea, or painful menstruation in the absence of pelvic pathology is a common and often debilitating gynecological condition that affects between 45% and 95% of women at reproductive age.

* Corresponding author

The current study aimed to assess the prevalence of dysmenorrhea and associated menstrual symptoms and their self-management techniques among females. This cross-sectional study was conducted in the Menoua Division, which has six subdivisions namely: Fokoue, Dschang, NKongni, Penka Michel, Santchou and Fongo tongo .For this purpose, 668 women aged from 12 to 38 years were considered. A self-administered questionnaire was used to collect data. The main results revealed that dysmenorrhea was reported on almost two-thirds of the women (66.17%). In the 442 girls who reported dysmenorrhea Severe pain was reported by 20.71 % of respondents. More than one-third of the respondents (39.75%) reported using pain relief medications with 23.38 % of herbal medicine and 76.54 % of synthetic medicines. The gastrointestinal problems (diarrhoea and vomiting were the most common symptoms experienced. Less than 19.41% of respondents reported having consulted a doctor for their dysmenorrhea, while most of them consulted friends and family. Dysmenorrhea is a very common problem among university students. A number of symptoms were related to dysmenorrhea. Even though it is common, and may not have a pathological cause, few women seek medical advice. Increasing the awareness might help in relieving the burden of this common health problem.

Keywords: Impact; Menoua Division ; Primary dysmenorrhea; Self-medications; Symptoms.

1. Introduction

Primary Dysmenorrhea is a painful/cramping sensation in the lower abdomen/lower back without any evident pathology to account for them [1,2,3]. It Affects 90% of adolescent and above 50% of menstruating women worldwide. Approximately 10-15% of females experience monthly menstrual pain, severe enough to stop normal daily functions at work, home, or school [4,5]. Due to its importance, different treatments including pharmacological and non-pharmacological treatment approaches [6]. This study was done to determine the prevalence, impact, and management of dysmenorrhea in Menoua division.

2. Methods

This cross-sectional study was conducted in the Menoua Division of the West Region of Cameroon, divided administratively into six subdivisions (Dschang, Fokoue, Fongo-tongo, Nkong-ni, Penka-michel and Santchou), for a period of 2 years (2017-2019). The study proposal was cleared from the Scientific evaluation board of the University of Dschang, and the Ethical committee (No: 10023 00040 0041 30000 35 ;swift :UCMACMCX). The study was performed on a total of 925 girls who agreed to voluntarily participate in the study. Written informed consent was obtained from all the girls before commencement of the study. The age of participants for the study was between 12 and 38 years. A questionnaire regarding details of the menstrual cycle was filled by the participants in the presence of members of the study team. Prior to the distribution of the questionnaire, a brief orientation lecture was conducted in the two official languages (French and English). The questionnaire had three major parts which focused on the socio-demographic characteristics, menstruation characteristics and their impact, and management practice of dysmenorrhea. The collected data using the quantitative method was cleaned, entered into, and analyzed using epi info version 16.0. In the study, socio-demographic characteristics, prevalence, impact, and the management practice of dysmenorrhea were described using frequencies, percentages, and mean and standard deviation. Binary logistic regression analysis was employed to determine

the association between different variables, and values less than 0.05 and 95% confidence interval (CI) were used as cut-off points for determining statistical significance of associations among different variables.

3. Results

In this study, out of the total questionnaires of sample of 1125 females who were interviewed, 925 were included in the analysis and 257 were excluded due to the presence of pelvic pathology making the response rate 74.31%. The mean age of respondents was 18.18 ± 2.99 years. All of them had attained All of them had attained menarche, averagely at 13.53 ± 1.6 years (ranging from 8 to 23 years).

The age at which the majority of participants (74.27%) began menstruations was comprised between 10 and 15 years; the remaining 20.62% had started menstruating after the age of 15, and only 5.11% had started menstruating below 10 years.

The difference between age at menarche and dysmenorrhea was not significant ($P > 0.3$). Most of the participants 480 (86.02%) reported bleeding duration of 3–5 days, which is normal. While only 47 (8.4%) reported less than 3 days and in 5.54% of participants, the duration extended for more than 6 days. The cycle length ranged from 20 to 35 days (only one female having 20 days).

4. Family history of dysmenorrhea

Almost half of the participants (45.59%) had complaints of dysmenorrhea among their immediate family members. Of the 45.59% of participants who had some family history of dysmenorrhea, 236 (87.73%) experiences the condition themselves (table 1).

5. The prevalence of dysmenorrhea

The prevalence of primary dysmenorrhea in the Menoua Division was 66.17% ($n = 442$), with the highest prevalences in Dschang (78.44%), Penka-Michel (72.72%) and Santchou (72.72%). Fongo-tongo, Fokoue and NKongni subdivisions had lower prevalence, irrespective of the locality (figure 1).

Dysmenorrhea was found to be significant ($P < 0.05$) with irregular cycle, older age, alcohol consumption, frequency of giving birth, family history of dysmenorrhea, bleeding duration, low level of consumption of vegetables and fruits, and low participation in sporting activities, earlier menarche, volume of menses and regular consumption of sweets, was not significantly associated with dysmenorrhea (table 1).

Table 1: Univariate analyses for the presence of dysmenorrhea among studied participants.

Variables		Total(%)	Presence of dysmenorrhea		P value
			Yes (%)	No(%)	
Age(years)	<15	59	34 (57.63%)	25 (42.37%)	<0.0001
	15-20	356	276 (77.53%)	80(22.47%)	
	20-25	129	114(88.37%)	15(11.63%)	
	>25	13	13(100%)	0(0.00%)	
Age of menorrh (years)	<10	28	28 (100%)	0 (0%)	0.30
	10-15	407	322(79.12%)	85(20.88%)	
	>15	113	92(88.31%)	21(16.19%)	
Nature of cycle	Regular	301	247 (75.2%)	54(24.8%)	
	Irregular	254	191 (82.06%)	63 (17.94%)	
Volume of menses	Low	21	14(66.67%)	7(33.33%)	0.04
	Moderate	351	284 (80.91%)	67(19.09%	0.10
	Important /high	169	144(85.20%)	25 (14.790%)	
Regular alcohol consumption	Yes	239	205(85.77%)	34(14.23%)	0.0001
	No	327	237 (72.48%)	90 (27.52%)	
regular fruits consumption	Yes	371	275(74.12%)	96(25.88%)	0.01
	No	154	129(83.77%)	25 (16.23%)	
Childbirth	Yes	45	37 (82.22%)	8 (17.78%)	0.04
	No	525	405 (77.14%)	120 (22.86%)	
Family history of dysmenorrhea	Yes	269	236 (87.73%)	33(12.27%)	0.000
	No	321	206 (64.17%)	115(35.82%)	
Bleeding duration (day)	<3	47	28 (59.57%)	19(40.43%)	0.002
	3-5	480	384 (80%)	96(20.00%)	
	>6	31	28(90.32%)	3 (9.68%)	
Physical activity	Yes	491	373 (75.97%)	118 (24.03%)	0.0009
	No	75	69 (92%)	6 (8%)	
Regularly of consumption of sweet	Yes	446	352 (78.92%)	94(21.08%)	0.30
	No	119	89 (74.79%)	30 (25.21%)	

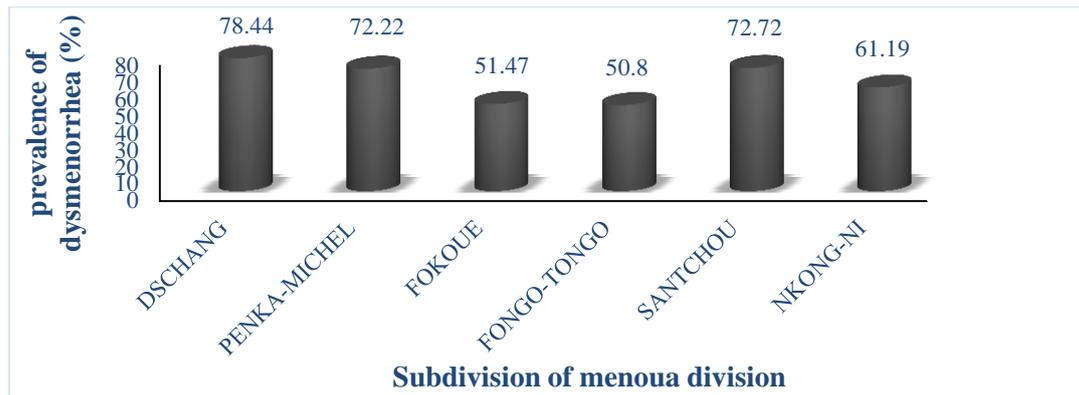


Figure 1: Prevalence of dysmenorrhea in different localities of the Menoua Division.

The table below represents the data pertaining to the symptoms experienced by the dysmenorrheic respondents during menstruation. The symptoms can be broadly classified into gastro-intestinal (GI) symptoms, aches, and any other symptoms. Among the GI symptoms, nausea was reported by 19.00%, and thigh pain 1.36%. Another symptom that affected girls during menstruation was tiredness as reported by 42.99%, dizziness by 25.11% and faintness by 3.39% of them.

Table 2: Symptoms experienced by the respondents during menstruation.

Variables	Total number	Percentage
Gastrointestinal		
Nausea	114	25.79%
Diarrhea	111	25.11%
Constipation	85	19.23%
Vomiting	44	9.95%
Aches and pains		
lower back	127	28.73%
Thighs pain	6	1.36%
Headache	84	19.00%
Others symptoms		
Tiredness	190	42.99%
Dizziness	111	25.11%
Faintness	15	3.39%

6. Impact and Management Practice of Dysmenorrhea

Menstrual pain influenced the overall quality of life: 152/442 (36.36%) of women with menstrual pain reported a certain degree of absenteeism (limitations) in their activities every time they had menstruation. About two-thirds (62.89%) of them used home remedies as a non-pharmacological treatment option of dysmenorrhea; only 19.41% (85) of the respondents consulted health professionals about their dysmenorrheal condition. About 37.70% (164) of them were using medications to manage their dysmenorrheal pain, 51.63% (79) did self-medication. 77% of Synthetic drugs (diclofenac, paracetamol, ibuprofen and monami) were the most frequently used medications, whereas herbal traditional medicines (23%) were among the most frequently used home

remedies to manage their illness (table3 and figure 2). Out of those respondents who used medications, the majority (76.923%) of them relieved sometimes, 5.92% never relieved, and only 17.16 % always relieved (figure3).

Table 3: Impact and management of pain

Parameters	Prevalence	IC 95 %
Limitation of activities (n= 418)	36,36% (152)	31,90 – 41,08
Medication (n= 435)	37,70% (164)	33,27 – 42,34
Automedication (n= 153)	51,63% (79)	43,42 – 53,78
Consultation médicale (n= 438)	19,41% (85)	15,98 – 23,35
Prescription of examens (n= 93)	50,54% (47)	39,97 – 61,07

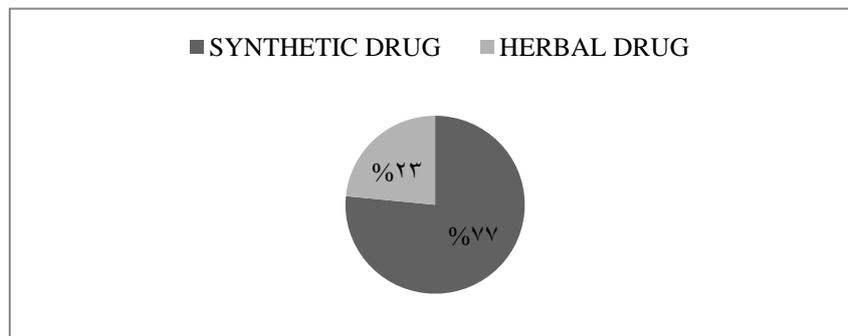


Figure 2: Management of pain (types of drug used).

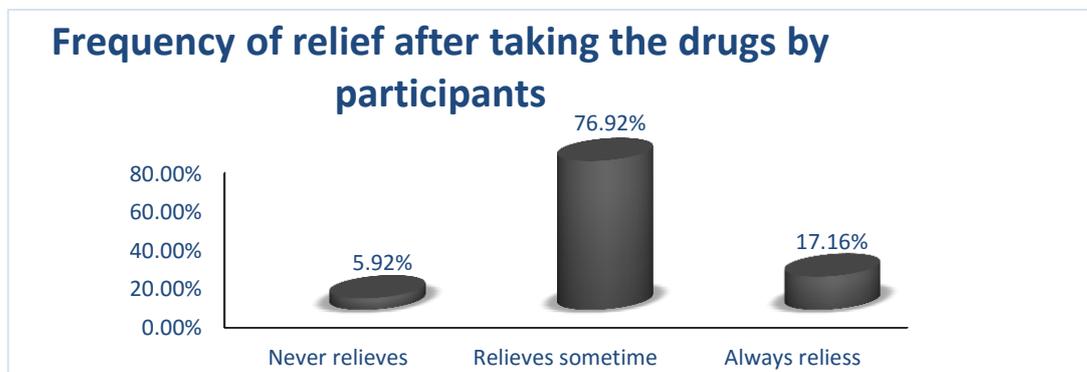


Figure 3: Frequency of relief after taking the drugs by participants

The characteristics that showed significant associations on univariate analysis, as well as some related features, were subjected to multivariate analysis. Family participants whose family members (sisters or mother) had a history of dysmenorrhea had 3.75 times greater chances of having the same problem, compared to participants without family history of the same pathology (OR: 3.75; 95% CI: 2.47 – 5.70; P = 0.001). Consumers of alcohol had 1.68 times greater chances of having dysmenorrhea when compared to those who do not consume alcohol (OR: 1.68; 95% CI: 1.08 – 2.58; P = 0.01) was the only significant association with dysmenorrhea, when corrected for Increasing age, giving birth and regularity of cycle and consumption of fruit and legume(tables 4)

Table 4: Logistic regressions of features associated with dysmenorrhea.

Variable		OR	95%CI	P-value
Age (years)	15-20	Reference		
	<15	0.39	0.21 – 0.73	0.003
	20-25	1.38	0.76 – 2.61	0.2
	>25	1.90	0.22 – 15.75	0.5
Regular alcohol consumption	Yes	1.68	1.08 – 2.59	0.01
	No	Reference		
history of dysmenorrhea	Yes	3.75	2.47 – 5.70	0.0001
	No	Reference		
Born	No	Reference		
	Yes	2.26	0.50 – 10.18	0.2
Regularity of cycle	No	Reference		
	Yes	0.64	0.42 - 0.97	0.03
Physical exercise	Yes	0.76	0.36 – 1.61	0.4
	No	Reference		
Regular consumption of vegetables	Yes	0.66	0.39 – 1.13	0.1
	No	Reference		
Regular consumption of fruit	Yes	0.58	0.34 - 1,00	0.05
	No	Reference		

7. Discussion

The menstrual period is a natural phenomenon that occurs throughout the reproductive age of most women. Most females experience some degree of pain and discomfort related to their menstrual period (dysmenorrhea) which could have important impacts on the activities and disturb their productivity at home or at their work place [7]. The prevalence of dysmenorrhea varies from 20% to 95% [8,9]. The results of the present study confirm this observation, as primary dysmenorrhea was seen in a majority of the young girls (66.17%). This variation of prevalence was due to a different diagnostic tool or different attitude towards menstruation. Similarly high prevalence (67.20%) was reported by Sharma and his colleagues [10] and Farotimi and his colleagues (84.10%) [6]. Concerning the spectrum of symptoms associated with primary dysmenorrhea, the most common symptoms associated with dysmenorrhea were tiredness, lower back pain, nausea, dizziness and diarrhea. Similar patterns of symptoms have been registered in an Indian study. It highlights tiredness and back pain as the most prevalent menstrual symptoms [11] However, this is not in accordance with a regional study in Palestine, where the most common symptoms associated with dysmenorrhea were physical fatigue and emotional instability, manifested as nervousness/irritability [12]. This may be due to the differences in perception of dysmenorrhea, as well as cultural and environmental factors. They mostly reported tiredness as the major symptom associated with dysmenorrhea. This may contribute to the inability to perform routine activity reported by a significant proportion of them. In our study, more than one thirds of study sample (36.36%) limited their activities during menstruation. this study was almost similar to that reported by Minaleshewa and his colleagues with 40.9% of the respondents experienced restrictions from day-to-day activities during their menstrual period and associated with this [13]. However, our result was much higher than reports made by Ongbayokolak and his colleagues [14] among students of university of Dschang Cameroon

which were 23.10% . The variation in the school absenteeism rate and other activities affected in these studies could be related to the different cultures, ethnicity and variation in the pain threshold perception. In the current study, only 19.41% of the participants consulted health professionals about their menstrual pain, probably due to the fact that most women consider it to be a normal part of menses, or do not think that treatment will help [15]. More than half (62.3%) of them endured their pain and only 37.70% of them used medication. Regarding these, a similar study done in Northwestern Ethiopia showed that only 16.20% consulted a healthcare professional, and more than 53.6% of participants endured dysmenorrhea [16]. Alongside this, only 36.50% of the participants managed to reach out for over-the-counter medications [17]. This might have resulted from the variation of baseline knowledge, attitude, and management practice of dysmenorrhea between these population groups.

8. Limitations

There are certain limitations of the study firstly, it has been conducted in some schools and districts of the six sub division, and therefore the sample may not be representative of all population in Menoua Division Women of study were randomly selected, but some did not complete the questionnaire. The self-reporting nature of this study may have resulted in recall bias and over-reporting of the condition. This may have had an impact on the reported prevalence of the disease

9. Conclusion

From the study, it can be concluded that dysmenorrhea is a very common problem in this sample of young women, and it affects their quality of life significantly. Girls almost always silently suffer the pain caused by dysmenorrhea, as well as the discomfort associated with it. This is due to the lack of knowledge about reproductive health. Women should be encouraged to seek medical care, which may be pharmacologic or non-pharmacologic, to limit the debility that arises from dysmenorrhea.

10. Source of Support

The funding of this work came from the authors.

11. Conflict of Interest

None declared.

Acknowledgements

We would like to express our profound gratitude to all the participants for their co-operation and contribution towards this study. The authors warmly thank Dr. Vemo Bertin Narcisse and Mr Enko Fidel for their help in editing the manuscript.

References

- [1]. N. Sharma , M. Sagayaraj , B. Sujatha .“Menstrual characteristics and prevalence of dysmenorrhea in

- college students." International Journal of Scientific and Research Publications, Vol.4,N^o.10pp. 1–6,2014..
- [2]. KJ. Berkley. "Primary dysmenorrhea: an urgent mandate." International Association for The Study of Pain., vol.21,N^o.3,p.p1–8,2013.
- [3]. N. Mahvash , A.Eidy , K. Mehdi . "The effect of physical activity on primary dysmenorrhea of female university students." World Applied Sciences Journal, Vol. 17,N^o.10, pp.1246–1252,2012..
- [4]. MY.Dawood . "Dysmenorrhea and prostaglandins," In Gynecologic Endo crinology 2nd ed .New York: Plenum Publishing Corporation, 1987,pp.405–421.
- [5]. KJ.Berkley , "Primary dysmenorrhea: an urgent mandate," International Association for The Study of Pain, Vol.21,N^o.3,pp.1–8,2013.
- [6]. M. Proctor and C .Farquhar . Diagnosis and management of dysmenorrhoea. BMJ, Vol.332, pp.1134–1138, 2006.
- [7]. M. Poureslami M. and FA. "Osati .Attitudes of female adolescents about dysmenorrhea and menstrual hygiene in Tehran suburbs". Archives of Iranian Medicine, Vol.5,N^o.4, p. 219,2002.
- [8]. ZA.Harel ."contemporary approach to dysmenorrhea in adolescents". Paediatr Drugs, Vol.4, pp.797–805,,2002.
- [9]. CS Hsu, JK Yang and LL Yang . Effect of a dysmenorrheal Chinese medicinal prescription on uterus contractility in vitro. Phytother Res.2003, 17:778–83.
- [10]. P.Sharma, C. Malhotra ,DK. Taneja ,R. Saha . "Problems related to menstruation amongst adolescent girls". Indian Journal Pediatr, Vol.75, pp.125–9,2008.
- [11]. S. Omidvar , F.Bakouei , FN.Amiri ,K.Begum. "Primary dysmenorrhea and menstrual symptoms in Indian female students: Prevalence, impact and management". Glob J Health Sci, Vol.8, P.53632 ,2016.
- [12]. HA. Abu Helwa , AA. Mitaeb , S. Al-Hamshri and WM. Sweileh . "Prevalence of dysmenorrhea and predictors of its pain intensity among Palestinian female university students". BMC Womens Health. Vol. 18 ,p.18, 2018
- [13]. MB Gebeyehu, AB Mekuria, YG Tefera, DA Andarge, YB Debay, GS Bejiga, and B M Gebresillassie' Prevalence, Impact, and Management Practice of Dysmenorrhea among University of Gondar Students, Northwestern Ethiopia: A Cross-Sectional Study. International Journal of Reproductive Medicine, ID 3208276, p 8 <https://doi.org/10.1155/2017>
- [14]. NS Ongbayokolak ,LL Lienou , S N Nguedia ^a, G M Tetaping , J B Bilim , PB Telefo. Epidemiology of dysmenorrhea among University of Dschang Students (West Region, Cameroon): A Cross-Sectional Study. IJISRT VoL 5 N^o1,pp 1251 –1256 ,2020
- [15]. M Proctor , C Farquhar . Diagnosis and management of dysmenorrhoea. BMJ ,;332:1134-8,2006.
- [16]. BG. Minaleshewa , BM. Abebe ,AA.Dagmawi ,BD.Yabsira, M. Begashaw ."Prevalence, Impact, and Management Practice of Dysmenorrhea among University of Gondar Students, Northwestern Ethiopia: A Cross-Sectional Study". Inter J Reprod Med,ID 3208276, 8p 2017. <https://doi.org/10.1155/2017/3208276>
- [17]. DC. Potur ,N. Komurcu . "The effects of local low-dose heat application on dysmenorrhea". J Pediatr Adolesc Gynecol,Vol.27,pp.216–221,2014.