

Self-care strategies for the management of primary dysmenorrhea among young women in Asir region, Saudi Arabia: a cross-sectional study

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Abstract. – OBJECTIVE: Dysmenorrhea is a global public health issue that affects around three-quarters of young women and is categorized into primary and secondary. Primary dysmenorrhea is characterized by painful menstrual cramps and it is not linked to any underlying uterine pathology. The global prevalence of primary dysmenorrhea has been estimated to range from 45-95% of women of reproductive age. Dysmenorrhea negatively impacts the quality of life of young women and commonly contributes to absences from work and school. This study was conducted to examine the self-management practices for primary dysmenorrhea among female undergraduate students in the Asir region.

SUBJECTS AND METHODS: The study has followed a cross-sectional design using a web-based self-administered questionnaire. A total of 391 students agreed to participate in the study and completed the questionnaire.

RESULTS: Around 82% (n=322) of the participants reported experiencing menstrual pain in the last three menstruations (dysmenorrhea). Just below two-thirds (62.1%) were current users of analgesics for managing menstrual pain. Paracetamol (70.4%) was the most commonly used analgesic, followed by Ibuprofen (45.7%). However, about 67% of the respondents were current users of complementary and alternative therapies (CATs) for managing dysmenorrhea. The participants indicated that their reasons for using CATs included reducing the need for analgesics (82%), safety (53.3%), efficacy (46%), availability (35.6%), recommendation from others (19.9%) and cost (7.3%). Just above half of the study participants indicated that CATs are less effective than analgesics. Around 74% of the respondents agreed or strongly agreed that CATs are safer than analgesics in relieving menstrual pain.

CONCLUSIONS: Community pharmacists are one of the most accessible healthcare practitioners that offer a wide range of health services

and consultations. Collaboration between educational institutions and community pharmacies could play a role in promoting self-care practices among young women.

Key Words:

Self-care strategies, Primary dysmenorrhea, Young women, Saudi Arabia.

Introduction

Dysmenorrhea or painful menstruation is recognized as a global public health issue that affects around three-quarters of female adolescents and women of child bearing age¹⁻³. There are two categories of dysmenorrhea; primary and secondary^{1,4}. Primary dysmenorrhea corresponds with experiencing painful menstrual cramps which are not linked to any underlying uterine pathology, and are commonly associated with fatigue, headaches, back pain, nausea, vomiting, and emotional instability^{1,5}. The global prevalence of primary dysmenorrhea ranges from 45-95% of women of child bearing age, of which 2-29% experience severe pain⁶. Secondary dysmenorrhea, on the other hand, is defined as painful menstruation that is associated with an identifiable cause, such as endometriosis³. Dysmenorrhea compromises the quality of life of young women and commonly contributes to absences from work and school^{4,7}.

Females usually consider dysmenorrhea as an unavoidable response to menstruation, which it is taboo to discuss and which should be tolerated⁶. Previous evidence suggests that the risk of primary dysmenorrhea is increased by a number of factors, such as smoking, early menarche, nulliparity, irregular menstrual cycle, long menstrual duration, heavy menstrual flow, and a family

history of dysmenorrhea⁶. However, the risk and severity of dysmenorrhea is reduced with vaginal child delivery and physical exercise⁶. A large number of young women uses self-care strategies to manage their menstrual pain and other associated symptoms without needing to seek medical advice³. Examples of these strategies involve rest, exercise, using herbs and using analgesics³.

Nonsteroidal anti-inflammatory drugs (NSAIDs) are considered an effective treatment for menstrual pain, as they inhibit prostaglandin synthesis and therefore ease the uterine vasoconstriction and contractions. Cyclooxygenase (COX) – which exists in two forms, i.e., COX-1 and COX-2 – is the enzyme responsible for the formation of prostaglandins. Non-selective NSAIDs inhibit both COX-1 and COX-2 enzymes. However, selective NSAIDs specially target the COX-2 enzymes and were approved in 1999 to tackle the common side effects associated with the traditional NSAIDs, such as headache and indigestion⁹.

A small-scale cross-sectional study¹⁰ conducted in the college of health sciences at King Khalid University in Saudi Arabia revealed that around 70% of the study participants reported experiencing dysmenorrhea. In their report, the symptoms that were most commonly associated with dysmenorrhea were lower back pain, nausea, bloating and dizziness¹⁰. This research also investigated the prevalence of NSAIDs and herbal medication use, but it did not examine the rationale for preferring one to the other¹⁰. Another study¹ was conducted in Malaysia and reported a similar prevalence of dysmenorrhea, i.e., 72.1%. The use of complementary and alternative therapies (CATs) was shown to be high¹. The primary reasons for using CATs were their efficacy as well as to reduce the need for analgesics¹.

The purpose of this cross-sectional study is to investigate the self-management practices for primary dysmenorrhea – i.e., pharmacological and non-pharmacological – among undergraduate female students in the Asir region.

Subjects and Methods

Study Design and Setting

The current study has followed a cross-sectional design using a web-based self-administered questionnaire. The study took place in King Khalid University (KKU) between September and November 2021. KKU is a governmental

institution located in the southern region of Saudi Arabia. It includes a total of 29 colleges and enrolls more than 60,000 students¹¹.

Study Participants

The study participants were female students enrolled in undergraduate programmes at KKU in the first semester of the academic year 2021/2022, and who are 18 years of age or older. A minimum recommended sample size of 380 participants was needed for this research, based on a population size of 29,097 students (KKU registry, September 2021), a 5% margin of error, a 95% confidence level and a 50% response distribution.

Data Collection

The Google forms platform was used to create an online questionnaire. A link for the questionnaire was advertised through social media channels, i.e., Twitter and WhatsApp¹², along with an introductory statement inviting eligible subjects to participate in the study, and highlighting the aim of the study and the inclusion criteria. A participant information sheet containing detailed information about the conduct of the study was displayed on the cover page of the questionnaire.

Materials

The questionnaire was adapted from previous researches¹, and it involved a total of 6 sections. Section One collected sociodemographic information, i.e., age, year of study, and marital status. Section Two was designed to assess the menstrual characteristics. Section Three evaluated the menstrual pain using the WaLIDD scale. Section Four gathered data on the use of analgesics to relieve menstrual pain. Section Five investigated the utilisation of complementary and alternative therapy for managing menstrual pain. The last section of the questionnaire evaluated the participant's perceptions regarding the use of analgesics, and complementary and alternative therapy, in the management of painful menstruation.

Ethical Considerations

Ethical approval was granted by the King Khalid University Research Ethics Committee, approval reference (ECM#2021-5611). Participation in the study was voluntary and potential participants had the right to decline the invitation to participate without any penalty. The current research did not require the collection of any identifiers, such as email addresses and IP addresses. The participant information sheet in-

volved a statement indicating that submission of a completed questionnaire implied consent to participate. Another statement explained that ‘by entering the questionnaire, I indicate that I have read the information provided and agree to participate’. This research was conducted in accordance with the Declaration of Helsinki.

Statistical Analysis

Data analysis was performed using SPSS version 27.0 for Mac (IBM Corp., Armonk, NY, USA). Descriptive statistics – i.e., frequencies and percentages – were used to present the study findings. The Chi-square test of independence was used to assess the association between the use of analgesics and complementary and alternative therapies and factors of interest. Statistical significance was set at an alpha level equal to 0.05.

Results

A total of 391 students agreed to participate in the study and completed the questionnaire. About 53% (n=207) of them were enrolled in non-health related programmes and the remaining 47% (n=184) were enrolled in health colleges, i.e., medicine, dentistry, pharmacy, applied medical science and nursing. The majority (85%) of the participants were single. Just above half (56%) of the respondents were in the 21-23 years age group, and nearly a quarter (24%) of them were studying in the fourth year of the academic programme. The demographic information of the study participants is summarised in Table I.

The mean age of menarche for the study participants was 12.86, SD=1.58. About 70% of the study participants reported regular menstruation and normal menstrual flow. Additionally, about 60% of respondents reported a family history of dysmenorrhea (Table I).

Around 82% (n=322) of the participants reported experiencing menstrual pain in the last three menstruations (dysmenorrhea). Reported symptoms were lower abdominal cramp (89.8%), fatigue (75%), nausea or vomiting (54.1%), headache (39.8%), diarrhoea (29.6%) and fainting (6.1%). The WaLIDD scale was used to assess the severity of dysmenorrhea among the participants. It showed that 46.5% and 43.4% had severe and moderate dysmenorrhea, respectively. A small minority (10%) were categorised as having mild dysmenorrhea (Table II).

Table I. Demographic information and menstrual characteristics of the participants (n=391).

Characteristics	N (%)
Age group	
18-20 years	93 (23.8)
21-23 years	238 (55.7)
24 years and older	60 (15.3)
Marital status	
Single	331 (84.7)
Married	60 (15.3)
Academic programme	
Health related	184 (47.1)
Non-health related	207 (52.9)
Academic year	
Year 1	40 (10.2)
Year 2	42 (10.7)
Year 3	56 (14.3)
Year 4	95 (24.3)
Year 5	74 (18.9)
Year 6	33 (8.4)
Year 7	51 (13)
Mean age of menarche (SD)	12.86 (1.58)
Regularity of menstrual cycle	
Regular	274 (70.1)
Irregular	117 (29.9)
Length of menstrual cycle for those with regular cycle	
21 days or less	85 (30.9)
22-28 days	154 (56)
29 days or more	36 (13.1)
Duration of menstruation	
Less than 5 days	53 (13.6)
5-7 days	301 (77)
8 days or more	37 (9.5)
Menstrual flow	
Scanty	31 (7.9)
Normal	277 (70.8)
Heavy	83 (21.2)
Family history	
Yes	136 (61)
No	87 (39)

Table II. Prevalence and characteristics of dysmenorrhea among the participants (n=391).

Variable	N (%)
Experiencing menstrual pain in the last 3 menstruations	
Yes	322 (82.4)
No	69 (17.6)
Symptoms of dysmenorrhea	
Cramp in lower abdomen	352 (89.8)
Fatigue	294 (75)
Nausea or vomiting	212 (54.1)
Headache	156 (39.8)
Diarrhoea	116 (29.6)
Fainting	24 (6.1)
Severity of dysmenorrhea	
Mild	39 (10)
Moderate	169 (43.4)
Severe	181 (46.5)

Table III. Prevalence and type of analgesics and complementary and alternative therapies used for dysmenorrhea (n=391)

Variable	N (%)
Current user of analgesics	243 (62.1)
Types of analgesics used for dysmenorrhea	
Paracetamol	171 (70.4)
Ibuprofen	111 (45.7)
Mefenamic acid	10 (4.1)
Naproxen	5 (2.1)
Tramadol	2 (0.8)
Other	35 (14.4)
Current user of CATs	261 (66.8)
Types of CATs used for dysmenorrhea	
Bed rest	224 (85.8)
Natural herbs	205 (78.5)
Hot compress/heating pad	201 (77)
Massage	81 (31)
Exercise	58 (22.2)
Yoga/meditation	31 (11.9)
Supplements	14 (5.4)
Other	1 (0.4)
Reasons for using CATs	
To reduce the need for analgesics	214 (82)
Safety	139 (53.3)
Efficacy	120 (46)
Availability	93 (35.6)
Based on recommendation	52 (19.9)
Cost	19 (7.3)
Effectiveness of CATs compared to analgesics	
Less effective	216 (55.2)
Equally effective	70 (17.9)
More effective	42 (10.7)
I don't know	63 (16.1)

Just below two-thirds (62.1%) were current users of analgesics for managing menstrual pain. Paracetamol (70.4%) was the most commonly used analgesic, followed by Ibuprofen (45.7%). Mefenamic acid (4.1%), Naproxen (2.1%) and Tramadol (0.8%) were the least used analgesics for dysmenorrhea (Table III). However, about 67% of the respondents were current users of CATs for managing dysmenorrhea. The CATs most commonly used by the students were bed rest

(85.8%), natural herbs (78.5%) and hot compress/heating pad (77%), whereas massage (31%), exercise (22.2%), yoga/meditation (11.9) and supplements (5.4%) were the least commonly used for managing menstrual pain. The participants indicated that their reasons for using CATs included: to reduce the need for analgesics (82%), safety (53.3%), efficacy (46%), availability (35.6%), recommendation from others (19.9%) and cost (7.3%). Just above half of the study participants indicated that CATs are less effective than analgesics (Table III).

The majority (77.7%) of the research participants agreed or strongly agreed that analgesics are effective in relieving menstrual pain (Table IV). However, only 63% agreed or strongly agreed that CATs are effective in relieving menstrual pain. Additionally, around 74% of the respondents agreed or strongly agreed that CATs are safer than analgesics in relieving menstrual pain.

The use of analgesics and CATs to treat menstrual pain was significantly associated with having a family history of menstrual pain, p -value<0.05 (Table V). However, only the use of analgesics was significantly associated with the severity of dysmenorrhea, p -value<0.05.

Discussion

This study set out to examine the self-management practices for primary dysmenorrhea among undergraduate female students in the Asir region. Consistent with previous research^{1,10,13,14}, the current study found that dysmenorrhea was prevalent in more than two-thirds of the undergraduate students. The majority of them were divided between having either severe or moderate dysmenorrhea. This finding is different from what was reported in previous researches^{1,15,16} using the same scale, where lower percentages of severe dysmenorrhea were observed.

Table IV. Perceptions regarding analgesics and complementary and alternative therapies (n=391).

	Frequency (%)				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Analgesics are effective in relieving menstrual pain	165 (42.2)	139 (35.5)	70 (17.9)	12 (3.1)	5 (1.3)
CATs are effective in relieving menstrual pain	71 (18.2)	175 (44.8)	102 (26.1)	36 (9.2)	7 (1.8)
CATs are safer than analgesics in relieving menstrual pain	151 (38.6)	137 (35)	77 (19.7)	26 (6.6)	0 (0)

Table V. Association between the use of analgesics and complementary and alternative therapies and factors of interest using Chi-square test.

	Use of analgesics		Use of CATs	
	Yes	No	Yes	No
Academic programme				
V Health related	116 (63%)	68 (37%)	122 (66.3%)	62 (33.7%)
Non-health related	127 (61.4%)	80 (38.6%)	139 (67.1%)	68 (32.9%)
<i>p</i> -value	0.731		0.859	
Family history of menstrual pain				
Yes	97 (71.3%)	39 (28.7%)	96 (70.6%)	40 (29.4%)
No	46 (52.9%)	41 (47.1%)	50 (57.5%)	37 (42.5%)
<i>p</i> -value	0.005*		0.044*	
Severity of dysmenorrhea				
Mild	15 (38.5%)	24 (61.5%)	25 (64.1%)	14 (35.9%)
Moderate	94 (55.6%)	75 (44.4%)	118 (69.8%)	51 (30.2%)
Severe	134 (74%)	47 (26%)	118 (65.2%)	63 (34.8%)
<i>p</i> -value	0.00*		0.599	

*Statistically significant association (p -value < 0.05).

The present findings seem to be consistent with another piece of research¹⁰ conducted in Saudi Arabia, which found that about two-thirds of respondents reported using analgesics to relieve menstrual pain. A recent Lebanese study⁶ revealed that the majority (76.4%) of females with dysmenorrhea reported taking analgesics to cope with their pain. However, the prevalence of self-medication in a Chinese study¹⁷ was only 34.8%, of which 15.6% were taking Western medicine, 8.6% were taking traditional Chinese medicine, and 10.6% were taking both for managing menstrual pain. These variations could be attributed to the country and socio-demographic differences among the study participants. For example, China is known for its traditional Chinese medicine, which has been used and practised for thousands of years¹⁸.

Consistent with a previous research³, Paracetamol was found to be the most common type of analgesic used by young women in the current study. This was followed by Ibuprofen, which was reported to be used by 45.7% of those experiencing menstrual pain. Other NSAIDs were not as widely used as Ibuprofen amongst the respondents. Previous research suggests that NSAIDs are very effective in relieving period pain, and there is no evidence that there is one particular NSAID that is superior to another⁹. In addition, Paracetamol is less effective than NSAIDs in reducing menstrual pain⁹. The current research did not aim to investigate the effectiveness of the analgesics used for managing pain.

Nearly two-thirds of the respondents in the present study reported using CATs to relieve menstrual pain. The most commonly used intervention amongst the CATs was bed rest, followed by natural herbs and hot compress/heating pads. However, massage, exercise, yoga/meditation and supplements were the least commonly used interventions for managing menstrual pain. Previous researches^{1,3,8} also revealed that rest was the most popular non-pharmacological approach for pain management. Findings from the current study mirror those of previous research which revealed that young women usually use CATs to reduce the need for analgesics¹. The second most reported reason in the current study was due to the perceived safety of CATs. Participants might be concerned about the side effects associated with using analgesics, specifically NSAIDs; for example, gastric ulcers and cardiovascular events⁹. However, above half of the study participants indicated that CATs are less effective than analgesics for managing menstrual pain and the majority believed that CATs are safer than analgesics.

Globally, community pharmacists have been recognised as one of the most accessible health-care practitioners, offering a wide range of health services and consultations¹⁹. Saudi Arabia is no exception, as the community pharmacy services have developed from focusing on the product to providing patient-oriented care¹⁹. Schools or teaching institutions could collaborate with community pharmacies in the provision of educational interventions for self-management support in primary dysmenorrhea.

Conclusions

The current research showed that dysmenorrhea was prevalent in more than two-thirds of the undergraduate students. About two-thirds of respondents reported using analgesics to relieve menstrual pain. Paracetamol was found to be the most common type of analgesic used by young women in the current study. Nearly two-thirds of the respondents in the present study reported using CATs to relieve menstrual pain. The most commonly used intervention amongst the CATs was bed rest, followed by natural herbs and hot compress/heating pads. Young women usually use CATs to reduce the need for analgesics. CATs were believed to be safer but less effective than analgesics in relieving menstrual pain. Collaboration between educational institutions and community pharmacies could play a role in promoting the self-care practices among young women.

Conflict of Interest

The Authors declare that they have no conflict of interests.

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Informed Consent

The participant information sheet involved a statement indicating that submission of a completed questionnaire implied consent to participate.

Ethics Approval

Ethical approval was granted by the King Khalid University Research Ethics Committee (approval reference: ECM#2021-5611).

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