

Prevalence of Dysmenorrhea Associated with Premenstrual Syndrome and Management Strategies by Using Medicinal Plants Adopted by Female Students

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Author's Contribution

Sabira Sultana did the statistical analysis and wrote the manuscript. Hafiz Muhammad Asif, Khalil Ahmad, Shifa Shafique, Saeed Ahmad, Naheed Ahmad and Abid Hussain designed the study, participated in data collection and processing. All authors read and approved the final manuscript.

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ABSTRACT

Aim and Objective: The study object was to evaluate the prevalence of Dysmenorrhea associated with premenstrual syndrome and its management strategies adopted.

Methodology: This cross-sectional study was conducted on consenting 530 females studying at the Islamia University of Bahawalpur, Sadiq Women University, Punjab College, Superior College, Best College of Bahawalpur. The data was gathered by general survey, questionnaires regarding PMS associated with dysmenorrhea, abdominal discomfort, backache, nausea, anxiety and depression, breast tenderness headache, vomiting, intake of food and self-management strategies.

Results: The mean age of participant of the study was 22.01±1.25. 288 (54%) females reported to PMS associated with dysmenorrhoea and from 288, 198 (69%) are those that utilized fast food and 90 (31.25%) are those who used simple homemade food. 277 (96%) females having backache and abdominal pain, 282 (97%) having nausea, 245 (85%) having anxiety and depression, 274 (95%) having irritability and pelvic discomfort, 196 (68%) having breast tenderness, 191 (66%) having headache, 166 (58%) having vomiting. 267 (93%) girls managed this problem by using medicinal plants. While 21 (7%) used other medical aid (allopathic medication) i.e. ponstan, brufen, Synflex etc. From 93%, 157 (55%) cures by using house hold herbal remedies such as Melaleuca alternifolia, 41 (14%) by Foeniculum vulgare, 28 (10%) by Trachyspermum ammi, 11 (4%) by Zingiber officinalis, 18 (6%) by Cinamoum verum, 3 (1%) by Elateria cardamom and 9 (3%) Cocos nucifera.

Conclusion: Dysmenorrhoea is a common problem and it affects academic performance and routine activities therefore proper intervention is needed.

INTRODUCTION

Dysmenorrhea is defined as severe painful cramping sensation of uterine origin and characterized by lower abdominal pain, headache, backache, nausea, vomiting usually occur at the onset of menstrual cycle and lasting from 1-3 days. The duration of pain is 8-72 hours

[1-3]. Most of the cases of dysmenorrhea are labelled as primary dysmenorrhea with no obvious pathology [4]. Adolescent girls have a higher prevalence rate of primary dysmenorrhoea and usually improve with age. In growing countries of world about 25–50% of adult women and 75% of adolescents experienced pain with menstruation, with 5–20% reporting stern

dysmenorrhoea that avoids them from participating in their daily activities [3]. Premenstrual syndrome (PMS) is the cognitive, behavioral, physical symptoms occur in luteal phase of menstrual cycle [5]. The exact cause of PMS is not known [6]. But it is believed that gonadal profile, i.e. lower level of serotogenic function in luteal phase is responsible for PM [7, 8]. There are many factors which are responsible for dysmenorrhea and Premenstrual syndrome. These are lifestyle, socioeconomic status, family history, smoking, body mass index (BMI), pelvic infection and parity etc. [9, 10]. Epidemiological review showed that more than 80% of women at child bearing age experience one of the symptoms of PMS (premenstrual syndrome) [11]. Another epidemiological review showed that the prevalence of PMS is 14-88% from which 5-10% shows severe type of symptoms [12]. Severe form of Premenstrual syndrome is known as PMDD (premenstrual dysphoric disorder) [13]. The prevalence of dysmenorrhoea is 28-89.5% [14-17]. In developing countries such as Indonesia, Bangladesh, India, Pakistan, Afghanistan, Philippines, Bhutan, turkey 75% adolescent women experienced dysmenorrhea, from which 5-20% reported to severe dysmenorrhea that prevent them to participate in daily activities [18]. The correlation between PMS and dysmenorrhea was made by Issa and Tomko [19, 20]. The literature gives an idea that about 80% of population used natural medicinal plant in West Africa, Mali, Ganvie, Qualata. Many Herbal remedies are used traditionally in reproductive disorders. Few of them are pharmacologically evaluated for menstrual disorders. In recent years, a large number of ethno botanical studies have been conducted on medicinal plants used for reproductive health in most of the countries [21, 22] Since in our country, little sporadic studies have been done on this issue. This problem now in high prevalence and its serious consequences on patient's routines activity, the present study aimed to examine the prevalence of dysmenorrhoea associated with premenstrual syndrome and its management strategies adopted.

METHODOLOGY

This cross-sectional study was conducted from March 2016 to July 2016 after approval of ethical committee from The Islamia University of Bahawalpur. Questionnaires were developed and distributed among the consenting participants of superior college, best college, Sadiq Women University. Total 530 girls were chosen for study (n=530), inclusion and exclusion criteria were told them. Inclusion criteria for participation were females' age between 16–35 years, normal abdomino-pelvic ultrasound, regular menstrual cycles, and agree to give informed assent to partake in the study. The female participants were assured of full secrecy and data obtained was being used just for research purposes. Exclusion criteria was age below 16 years and more than 35 years, irregular menstrual cycles, an abnormal pelvic ultrasound and those not willing to give informed consent to take part in the study. Participants were also excluded if they were taking medications including antispasmodics, corticosteroids antipsychotics, antidepressants, sedative hypnotics, or taking physician prescribed medicines. Female who didn't want to participate or with chronic disease like hypertension, diabetes mellitus was excluded from the study. Participants were guided to complete questionnaires carefully and also told them that their information will remain confidential. Questioners were developed with reference of previous studies [23, 24]. The first part of questionnaires contains the personal information i.e. name, father /husband name, age, contact number, address, date, CNIC number, second part contains the characteristics of PMS and dysmenorrhea. Visual Analogue Scale (VAS) is used to determine the rating of pain. Second part includes family history, past history, drug history. Third part contains the associated symptoms i.e. vomiting, nausea, headache, pelvic discomfort. Fourth part contains the management strategies by using herbal remedies, their dosage; method of use, timing, and last part of questioner contains the general physical examination.

STATISTICAL ANALYSIS

The data were analyzed by using Microsoft excel 2007 version. Data were expressed in mean \pm standard error of mean. The data of the patients were compared through Chi-square test. A p value of ≤ 0.05 considered statistically significant.

RESULTS

The mean age, weight, height and BMI of participant of the study was 22.01 ± 1.25 , 54.2 ± 5.2 , 149.3 ± 3.8 , 23.1 ± 1.5 respectively. 288 (54%) females reported to PMS associated with dysmenorrhoea and from 288, 198 (69%) are those that utilized fast food and 90 (31.25%) are those who used simple homemade food (Table 1). 277 (96%) females having backache and abdominal pain, 282 (97%) having nausea, 245 (85%) having anxiety and depression, 274 (95%) having irritability and pelvic discomfort, 196 (68%) having breast tenderness, 191 (66%) having headache, 166 (58%) having vomiting (Table 2). 267 (93%) girls managed this problem by using medicinal plants. While 21 (7%) used other medical aid (allopathic medication) i.e. ponstan, brufen, Synflex etc. From 93%, 157 (55%) cures by using house hold herbal remedies such as *Melaleuca alternifolia*, 41 (14%) by *Foeniculum vulgare*, 28 (10%) by *Trachyspermum ammi*, 11 (4%) by *Zingiber officinalis*, 18 (6%) by *Cinamoum verum*, 3 (1%) by *Elateria cardamom* and 9 (3%) *Cocos nucifera* (Table 3).

Table 1. Features of study participants.

Characteristics (n=530)	Results
Age	22.01 \pm 1.25
Weight	54.12 \pm 5.2
Height	149.3 \pm 3.8
BMI	23.1 \pm 1.5
Females having PMS and Dysmenorrhea	288 (54%)
Females having no PMS and Dysmenorrhea	242 (46%)
Frequent fast food habits	198(69%)
Regular homemade hostel food	90 (31%)

Table 2. Symptoms associated with dysmenorrhoea.

Characteristics	Mild	Moderate	Severe	Total
Backache and lower abdominal pain	179 (62%)	70(24%)	28(10%)	277(96%)
Breast tenderness	109(38%)	73(25%)	14(5%)	196(68%)
Irritability and pelvic discomfort	218(76%)	29(10%)	27(9%)	274(95%)
Depression and anxiety	191(66%)	37(13%)	17(6%)	245(85%)
Headache	156(54%)	20(7%)	15(5%)	191(66%)
Nausea	226(78%)	38(13%)	18(6%)	282(97%)
Vomiting	106(37%)	41(14%)	19(7%)	166(58%)

Table 3: Management strategies.

Medicinal plants and others	Participants used
<i>Melaleuca alternifolia</i> (Tea)	157 (55%)
<i>Foeniculum vulgare</i> (Saunf)	41 (14%)
<i>Trachyspermum ammi</i> (Ajowain)	28 (10%)
<i>Cinamoum verum</i> (Dar chini)	18 (6%)
<i>Zingiber officinalis</i> (Ginger)	11 (4%)
<i>Cinamoum Cardamom</i> (Cardamoum)	03 (1%)
<i>Cocos nucifera</i> (Coconut)	9 (3%)
Allopathic Medicine	21 (7%)

DISCUSSION

Now a day's women health is main objective, which is indicator of social and economic development [25]. PMS and dysmenorrhea are a common public health problem of women worldwide which is broadcast spectrum cause of absenteeism from university / college / workplace and negative affect on the quality of life. These sufferings reduce educational productivity. Impair social relationship. [26, 27]. PMS is a group of cognitive and physical symptoms that occurs prior to onset of mensuration. Dysmenorrhea is a series of annoying symptoms that occurs with onset of bleeding. Dysmenorrhea is actually a painful mensuration that associated with other associated symptoms i.e. vomiting, headache, nausea, backache, irritability, lower abdominal pain, pelvic discomfort [28], dysmenorrhea and PMS are most common public health issues of women, that adversely affects the quality of life and productivity in under developed and developed countries different types of studies have done that shows the highest frequency of both PMS and dysmenorrhea in different ages and nationalities and leads to increased

consumption of medical health services [29-33]. The objective of our study was to evaluate the prevalence of PMS and dysmenorrhea, PMS and their management strategy adopted by Hostelised girls of district Bahawalpur. The study aimed to give literature about this suffering so that in further, quality of health can be upgraded. And the purpose of our study was to minimize the literature gap. In earlier literature the prevalence was 43-90% [34]. In this cross-sectional study, results reveal the prevalence of PMS and dysmenorrhea is (n=288) 54% in age group of 22.01 ± 1.25 years which indicates it is a common problem of female student. While (n=242) 46% are those who were not reported to these sufferings. Similar findings were seen in a study conducted by Anati in Calabar University, results revealed the prevalence of PMS at 16-31 year was 85.5% [35]. The prevalence of dysmenorrhoea was 23.4%-89.5% in Turkey [36, 37]. In an Australian study the prevalence of dysmenorrhea was 93% [38]. In general, the prevalence of dysmenorrhea ranging is 67-90% at age of 17-24 years [39, 40]. And earlier studies showed that the prevalence of PMS is variable [41] as high as 75-85% [42, 43]. PMS associated with dysmenorrhoea covers the large segment of women, with no definitive aetiology no definitive treatment so arises to need to design this study. The study also conducted to evaluate its association with other factors. Our study shows the positive association dietary habits with PMS and dysmenorrhea. Females who utilized more fast food are more liable to have these sufferings. In our study (n=198) 69% of female that having the suffering having positive history of using fast food. While (n=90) 31.25% using simple homemade food but having the PMS and dysmenorrhea. Those may be due to other etiological factors. In this study the fast food/junk food is a strong risk factor. In this cross-sectional study, the management strategy adopted by girls is also studied. Results concluded that 93% managed it by using traditional medicinal plant while minority 7% require the other medical aid (allopathic medication). From 93% (n=157) 55% female managed by using tea tree (*Melaleuca*

alternifolia) that have active constituents are 1, 8-cineole, terpinen-4-ol, alpha-terpineol and gamma-terpinen that having anti-inflammatory and anti nociptive properties [44]. And n=41(14%) using sounf (*Foeniculam vulgare*) contains Mefenamic acid. That having analgesic properties. Mefenamic acid is an anethol and antispasmodic agent [45, 46]. The results show the trend of using medicinal plants are increasing day by day. The study shows the high prevalence (54%) of PMS and dysmenorrhoea. So, it is the need of the time to arrange the workshop and give literature about method of prevention that simply by changing life style and changing dietary habits by using simple food that can minimize the sufferings and by using the traditional medicinal plants can reduce the symptoms.

CONCLUSION

The study concluded that PMS and dysmenorrhea is a common leading gynecological problem among females having positive association between the dietary habits and symptoms of PMS and dysmenorrhea. Those who used more fast food/junk food than homemade food/simple food are more prone to PMS and dysmenorrhea. By changing dietary habits, moving from fast food /junk food to simple homemade food can minimize the undue suffering. The study showed that 93% participants managed it by using medicinal plant (house hold remedies) and a minority only 7% need other medical measures.

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Ethics approval and consent to participate

The study was approved by the Ethics Review Committee at University College of Conventional Medicine, The Islamia University Bahawalpur. All participants were provided written informed consent.

Consent to publish

Not applicable.

Competing interests

The authors declare that they have no competing interest.

Availability of data and material

Questions regarding access to the data should be sent to the Department of University College of Conventional Medicine.

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Data statements

In the study here, the data used for analysis is not an open dataset due to legal reasons. For using this data, we received permission from Department of University College of Conventional Medicine.

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