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Original Research Article

Prevalence of dysmenorrhoea and its management strategies among females: a cross-sectional study in the tribal district, Koraput

Sunita Jena[1], Krushna Chandra Sahoo[2], Binod Kumar Patro[3], Sandeep Kumar Tripathy[4], Ramanand Pandit[1]*

[1]Department of Public Health, Sunrise University, Alwar, Rajasthan, India
[2]Regional Medical Research Centre, Indian Council of Medical Research, Bhubaneswar, Odisha, India
[3]All India Institutes of Medical Sciences, Sijua, Patrapada, Bhubaneswar, Odisha, India
[4]SLN Medical College, Koraput, Odisha, India

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***Correspondence:**
Dr. Ramanand Pandit,
E-mail: ramanandpandit38@gmail.com

ABSTRACT

Background: Menstruation is a major and frequently incapacitating health problem that affects women all over the world. Tribal communities often possess unique cultural, socioeconomic, and healthcare disparities, which can affect the experience of dysmenorrhea in these populations. This paper presents an exploration of dysmenorrhea's prevalence, impact, and management among tribal women

Methods: A cross-sectional study design was adopted with a total of 341 participants with an age range between 15 to 49. A semi-structured questionnaire was administered to identify the prevalence of dysmenorrhoea, menstrual characteristics, and strategies to manage dysmenorrhoea. Data collection was done for the period of 4 months (March 2020 to June 2020) and analysed using SPSS version 16.

Results: The study revealed a high prevalence of dysmenorrhea among tribal women (69.25%). The most common symptoms. A multivariable logistic regression analysis revealed that a significant association was found between dysmenorrhoea and the presence of a family history of dysmenorrhoea (AOR: 2.01; 95% CI: 1.18-3.42; p=0.009), the odds of developing dysmenorrhoea was 2.01 times higher among the female presence of a family history of dysmenorrhoea than absent and dysmenorrhoea with the presence of the clot (AOR: 2.99; 95% Cl: 1.81-4.94; p=0.000), the odds of developing dysmenorrhoea was 2.99 times higher among the female it history of present clot it than absent.

Conclusions: According to this study, tribal women are not well-prepared to deal with dysmenorrhea. The current findings not only clarify the detrimental effects of social stigma on menstrual health literacy, but they also have significant implications for evaluating and reforming current menstrual education standards.

Keywords: Tribal women, Menstruation, Dysmenorrhoea, Management-seeking practices, Menstrual pain

INTRODUCTION

Dysmenorrhea ranks as one of the prevalent gynecological conditions experienced by a significant portion of menstruating individuals.[1] Despite its prevalence, dysmenorrhea often goes undiagnosed, with many women opting not to seek medical assistance.[2] The International Association for the Study of Pain defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage".[3] Dysmenorrhea can be categorized into two main types: primary

dysmenorrhea and secondary dysmenorrhea. Primary dysmenorrhea is characterized by recurrent crampy lower abdominal pain during menstruation in the absence of underlying diseases, often diagnosed in adolescents and young women as an exclusionary diagnosis. On the other hand, secondary dysmenorrhea is associated with painful symptoms stemming from underlying conditions such as endometriosis, uterine fibroids, or adenomyosis. Women with secondary dysmenorrhea may experience clinical features like pain during intercourse, resistance to effective treatment, and an enlarged uterus.[4]

Dysmenorrhea exerts a considerable adverse effect on health-related quality of life, daily routines, work productivity, and academic performance.[5,1] Approximately 42% of young women noted restrictions in their daily activities, with 17% indicating that they missed 1-2 days of work or school.[6] Previous research has also shown that young individuals affected by dysmenorrhea frequently have to miss work or school due to discomfort, leading to significant social and economic consequences.[7,8] Despite its widespread occurrence and its impact on daily life, primary dysmenorrhea (PD) is frequently undertreated and sometimes overlooked, as many young females endure the pain silently without seeking medical guidance.[9] Non-steroidal anti-inflammatory drugs (NSAIDs) stand as the preferred pharmaceutical treatment for individuals with primary dysmenorrhea. Nonetheless, a significant number of dysmenorrhea patients do not consult medical professionals or seek assistance from healthcare experts. Instead, they resort to self-medication or explore alternative remedies. Prolonged self-medication without a medical prescription or, at the very least, a professional evaluation can potentially lead to adverse side.[10]

Marjoribanks and colleagues conducted a comprehensive review that encompassed 80 randomized controlled trials involving 5820 women. Their findings indicated that NSAIDs are 4.5 times more effective than a placebo in providing pain relief; odds ratio (OR)=4.37, 95% confidence interval (CI)=3.76-5.09. Additionally, NSAIDs were twice as effective as paracetamol (OR=1.89, 95% CI=1.05-3.43), with no notable superiority observed among individual NSAIDs for pain relief.[11] Furthermore, women often regard dysmenorrhea as an embarrassing and taboo topic, viewing it as an inevitable consequence of menstruation that should be endured without complaint.[12] Numerous factors have been established as contributing to an elevated risk of dysmenorrhea, including early onset of menstruation, nulliparity, irregular menstrual cycles, prolonged menstruation, heavy menstrual bleeding, a family history of dysmenorrhea, and smoking.[13,9] A study identified both physical and environmental risk factors associated with dysmenorrhea, which encompass early menarche, heavy menstrual flow, a family history of dysmenorrhea, smoking, alcohol consumption, elevated body mass index (BMI), and various social factors.[14]

Self-care is the practice of engaging in activities that individuals independently initiate and carry out to preserve life, health, and well-being.[12] The self-care approaches employed by adolescent girls with primary dysmenorrhea (PD) exhibited regional variations. Numerous studies have consistently noted that approximately 58% to 70% of western adolescent girls resort to self-medication using non-steroidal anti-inflammatory drugs and analgesics for the management of dysmenorrhea.[15] These findings contrast with those of a study suggesting that a significant proportion of Asian girls expressed reluctance towards using medications to address primary dysmenorrhea, primarily due to concerns related to potential dependence and adverse effects.[12] The global occurrence of dysmenorrhea varies, affecting 45% to 95% of women in their reproductive years, with 2% to 29% enduring severe pain.[16-22,9] In a recent comprehensive analysis of global literature regarding chronic pelvic pain, it was found that the prevalence of dysmenorrhea varies widely, ranging from 17% to 80%.[23] In India, one study by Nag George reported an incidence of 33.5% among adolescent girls, while Bhaduri found dysmenorrhea to be a prevalent issue in India, with a reported prevalence of 87.87%.[24] George and Bhaduri discovered that dysmenorrhea is a prevalent issue in India, with a prevalence rate of 87.7%.[25] Comparable results were documented by Jayashree and Jayalakshmi in married women residing in rural areas of Andhra Pradesh.[26] Understanding dysmenorrhea's prevalence, impact, and management within tribal communities is essential for providing effective healthcare solutions that respect cultural norms and improve the overall quality of life for these women. Hence, this study aims to find the prevalence of dysmenorrhoea and its co-associated symptoms and assess the management strategies among females of Koraput district of Odisha state.

METHODS

Study design and location

A community based cross-sectional study was conducted among females. The sample was selected from the two blocks of Koraput district. Two blocks were selected purposefully for the study purpose. Koraput is a tribal district with 1.5 million of population with equal sex ratio. All regular menstruating adolescent girls attending school during the data collection period and who were randomly selected were our study population.

Study participants

Study participants were females from the general population aged between 15-49 years and expressed an interest in participating the study were included in the study, we explained the nature and purpose of the study to them and their questions regarding the study were answered. Informed consent was taken from the participants before participating in the study.

Sample size

From the previous literature review, it is estimated that prevalence of dysmenorrhoea among females was approximately 72%.[25] The sample size was calculated using the Open Epi-tools. With Anticipated prevalence: 72%, Power: 80%, Confidence level: 95%, Design effect: 1. The Calculated Sample size was 300, in accounting for non-response 10%, the estimated Sample size 330. So, almost, 350 samples were taken.

Study tool

A semi structured questionnaire used for data collection with the subheadings: socio-demographic, socio-economic factors of the household, menstrual cycle, length of cycle, amount of blood flow, duration of flow, family history of dysmenorrhoea, presence of clot, pre-menstrual symptoms and severity of dysmenorrhoea, also pharmacological strategies, non-pharmacological strategies, home remedy, etc.

Data collection & analysis

Data were collected from March 2020 to June 2020. Close ended questionnaire was prepared then translated into local language, as the study site was a tribal area for better understanding, local health worker was approached for data collection. A total 350 were recruited by purposive sampling for the present study, nine of them denied for the participation so 341 responses were finally taken. House to house approach was taken to complete the data collection. Wherever necessary, significant information and response were provided to the girls. The collected data were entered to EPI-INFO (software). [27] Then xported to SPSS version 20 for analysis, simple descriptive analysis was performed and multivariate logistic regression was used in order to find the association. Before the data collection, Participants were informed as there will not any risk due to their participation, and the confidentiality will be maintained. Written informed assent was obtained from the parents of the students.

RESULTS

Socio-demographic distribution of data among the participants

The socio-demographic characteristics of the study participants were found to be unique and equally distributed as noted in 1. A total of 341 reproductive age group (15-49 years) females were recruited in this cross sectional study. The calculated mean age of the study participants was 27.5 with SD (±8.13) years and the mean age at menarche was 13.32 with SD (±1.85) years.

Majority of the participants, 266 (78%) were married. Hindu, 326 (95.6%) was the dominant religion among the study participants. The participants from the general caste had higher percentage of participants, 116 (39.3%), in contrast to the other castes. As per education distribution of the participants attended secondary education were 218 (63.9%) followed by illiterate, 43 (12.6%), primary 53 (15%), and graduate or above 29 (8.5%). As per occupation is concerned majority of the participants were house wife 239 (70.1%) As per Kuppuswamy scale, wealth index of the study participants was; upper 1 (0.29%), upper middle 18 (5.28%), lower middle 57 (16.7%), upper lower 252 (73.9%), lower 13 (3.81%). Regarding ownership of the house, most of the participants, 252 (73.9%) were living in their owned house.

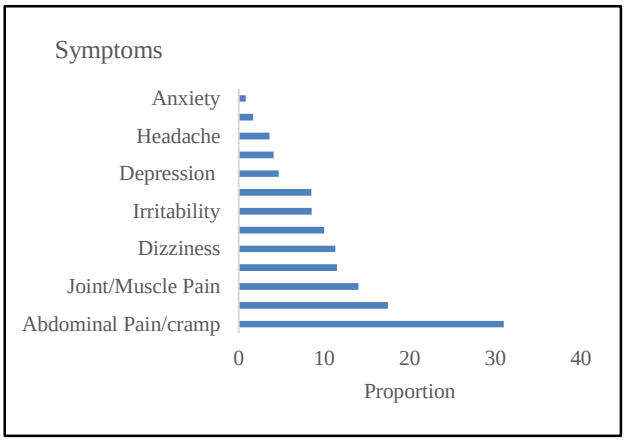

Figure 1: Percentage of participants with dysmenorrhoea who suffer from associated symptoms (more than one symptom).

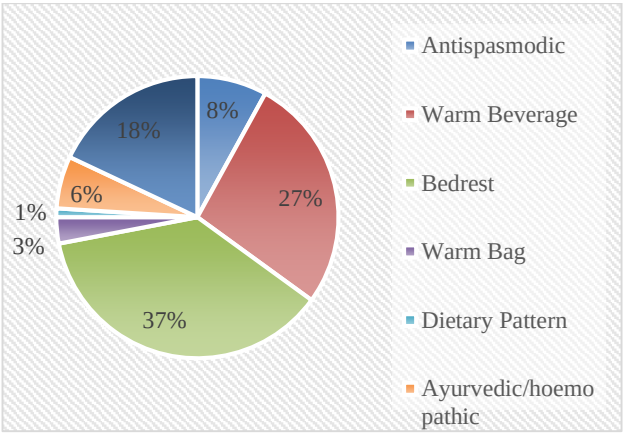

Figure 2: Management strategies practiced for the relief of dysmenorrhoea.

Table 2 represents about the test of association between dysmenorrhoea and its associated factors such as menstrual cycle, amount of blood flow, duration of flow, length of the cycle, family history of dysmenorrhoea, and presence of clot analyzed. The result depicted the significant difference in the menstrual cycle (p=0.012), amount of blood flow (p=0.017), length of the cycle (p=0.021), family history of dysmenorrhoea (p=0.016), and present of the clot (p=0.000) among the study participants with dysmenorrhoea.

Table 1: Socio-demographic characteristics of participants (n=341).

Variables	N	%
Age of the female (years)		
15-20	75	21.99
21-26	104	30.50
27-32	76	22.29
33-38	38	11.14
39-44	36	10.56
45-49	12	3.52
Marital status		
Unmarried	75	22
Married	266	78
Religion		
Hindu	326	95.6
Christian	8	2.35
Muslim	7	2.05
Caste		
ST	39	11.44
SC	52	15.25
OBC	134	39.30
General	116	34.01
Participant's education		
Illiterate	43	12.6
Primary	51	15
Secondary	218	63.9
Graduate and above	29	8.5
Participant's occupation		
Service (office job)	2	0.55
Business	2	0.56
Factory/construction labour	2	0.59
Housewife	239	70.1
Student	44	12.9
Others	52	15.3
Education of head of the family		
Graduate or postgraduate	15	4.40
Intermediate or post-high school diploma	27	7.92
High school certificate	115	33.72
Middle school certificate	91	26.69
Primary school certificate	53	15.54
Illiterate	40	11.73
Occupation of head of the family		
Profession	1	0.29
Semi-profession	14	4.10
Clerical shop-owner	8	2.35
Skilled worker	26	7.62
Semi-skilled worker	34	9.97
Unskilled worker	253	74.2
Unemployed	5	1.47
Socioeconomic status		
Upper	1	0.31
Upper middle	18	5.28
Lower middle	57	16.7
Upper Lower	252	73.9
Lower	13	3.81
Monthly income of the family		
>41430	5	1.47
20715-41429	11	3.23

Continued.

Variables	N	%
15536-20714	17	4.91
10357-15535	80	23.5
6214-10356	145	42.5
2092-6213	81	23.8
< 2091	2	0.59
Ownership status of the house		
Owned	252	73.9
Rented	89	26.1

Table 2: Factors associated with dysmenorrhoea (n=341).

Characteristics	Dysmenorrhoea				P value
	Present		Absent		
	N	%	N	%	
Menstrual cycle					
Regular	169	58.48	120	41.52	0.012
Irregular	40	76.92	12	23.08	
Amount of blood flow					
Mild	38	59.38	26	40.62	0.017
Moderate	106	56.08	83	43.92	
Severe	65	73.86	23	26.14	
Duration of flow (days)					
<2	27	58.70	19	41.30	0.621
3-5	142	59.92	95	40.08	
5-7	36	69.23	16	30.77	
More than 7	4	66.67	2	33.33	
Length of cycle (days)					
<21	14	73.68	5	26.32	0.021
21-30	156	57.56	115	42.44	
>30	39	76.47	12	23.53	
The family history of dysmenorrhoea					
Absent	122	55.71	97	44.29	0.016
Present	71	72.45	27	27.55	
Don't know	16	66.67	8	33.33	
Presence of clot					
Absent	91	48.40	97	51.60	0.000
Present	118	77.12	35	22.88	

The (Table 3) shows the test of association between dysmenorrhoea among females with menstrual cycle such as (regular, irregular), amount of blood flow (mild, moderate, severe), duration of flow (<2 day, 3-5 day, 5-7 day, more than 7 days), length of cycle (<21 days, 21-30 days, >30 days), family history of dysmenorrhoea (absent, present, don't know) and presence of clot (absent, present). The multivariate analysis was carried out with dysmenorrhoea as the dependent variable menstrual cycle, amount of blood flow, duration of blood flow, length of the cycle, family history of dysmenorrhoea and presence of clot as exposure variables. Logistic regression was applied to determine the association between dysmenorrhoea and factors, and the result revealed a statistically significant association between the two variables ($p<0.05$). Multivariate-adjusted model depicted that, the family history of dysmenorrhoea and presence of clot were found to be significantly associated with dysmenorrhoea among females. A significant association was found between dysmenorrhoea and presence of family history of dysmenorrhoea, the (AOR: 2.01; 95% CI: 1.18-3.42; p=0.009), the odds of developing dysmenorrhoea was 2.01 times higher among the female presence of family history of dysmenorrhoea than absent. Also shows that significant association between dysmenorrhoea with a present of the clot (AOR: 2.99; 95% Cl: 1.81-4.94; p=0.000), the odds of developing dysmenorrhoea was 2.99 times higher among the female history of present clot than absent. The (Figure 1) depicts the most commonly reported symptoms associated with dysmenorrhoea.

Table 3: Association between menstrual cycle factors and dysmenorrhoea among females (n=341).

Characteristics	OR (95%Cl)	AOR (95%Cl)	P value
Menstrual cycle			
Regular	Ref	Ref	Ref
Irregular	2.36 (1.19-4.70)	1.25 (0.34-4.55)	0.731
Amount of blood flow			
Mild	Ref	Ref	Ref
Moderate	0.87 (0.49-1.55)	0.89 (0.47-1.72)	0.749
Severe	1.9 (0.97-3.85)	1.76 (0.81-3.83)	0.153
Duration of flow (days)			
<2	Ref	Ref	Ref
3-5	1.05 (0.55-1.99)	1.20 (0.58-2.51)	0.612
5-7	1.58 (0.68-3.63)	1.39 (0.54-3.57)	0.483
More than 7	1.40 (0.23-8.48)	0.64 (0.09-4.34)	0.653
Length of cycle (days)			
<21	Ref	Ref	Ref
21-30	0.48 (0.16-1.38)	0.37 (0.10-1.40)	0.147
>30	1.16 (0.34-3.88)	0.63 (0.11-3.57)	0.605
The family history of dysmenorrhoea			
Absent	Ref	Ref	Ref
Present	2.09 (1.24-3.50)	2.01 (1.18-3.42)	0.009
Don't know	1.59 (0.65-3.87)	1.66 (0.66-4.17)	0.280
Presence of clot			
Absent	Ref	Ref	Ref
Present	3.59 (2.23-5.76)	2.99 (1.81-4.94)	0.000

Majority of female suffered from pre-menstrual symptoms; abdominal bloating (17.45%), joint-muscle pain (14.92%), followed by: fatigue (11.55%), dizziness (11.31%), poor-concentration (9.868%), breast heaviness/tenderness (8.544%), irritability (8.544%), nausea and vomiting (4.091%), depression (4.693%), headache (3.610%), insomnia (1.685%), food and/or cravings (1.324%), anxiety (0.842%) were reported.

The (Figure 2) represent the commonly adopted strategies in the management of dysmenorrhoea majority 37.02 women to bed rest to get relived from the symptoms followed by warm beverage (27.48%), and home remedies (such as eating fenugreek, ginger and drinking black pepper water) (17.94%). These identified strategies did not show any harmful practice or adverse effects in managing dysmenorrheic pain among the females.

DISCUSSION

A total of 341 reproductive age group (15-49 years) females were recruited in this cross sectional study and the result of the study found that dysmenorrhea was present among 69.25% of the women. The study found similar result such as the estimated prevalence varies between 20% to 95%.[28,29] Other studies found high prevalence of dysmenorrhea among women in the different context of India. For instance, Sharma et al., reported 67.2% reported 84% of women suffers from dysmenorrhea.[30,26] Conversely, research conducted in developed countries also indicated prevalence rates ranging from 60% to 73%.[31] Numerous studies have demonstrated a significant correlation between an early onset of menarche and dysmenorrhea. This association may be attributed to the extended exposure of girls who experience early menarche to uterine prostaglandins, resulting in an increased prevalence of dysmenorrhea. Our study found family history of dysmenorrhoea and presence of clot factors associated with the dysmenorrhea. Epidemiological investigations have revealed correlation between dysmenorrhea and various environmental risk factors, such as cigarette smoking and coffee consumption.[26] Another study reported that dysmenorrhea is associated with BMI (body mass index).[32] But contradiction to the findings, an Indian study reported that there was no such association of BMI and dysmenorrhea.[33] Current study found dysmenorrhea is associated with the family history. Similar to our study findings, another study found the similar results. A history of dysmenorrhea appears to be a significant risk factor for women experiencing this condition. Approximately 53.7% of the participants showed a positive familial correlation, meaning that either their mother or a sibling had experienced similar complaints. These findings align with prior studies that have established a association between family history of dysmenorrhea and dysmenorrhea among current women.[26,34] Women in their reproductive years commonly encounter symptoms during the late luteal phase of their menstrual cycle, which are collectively referred to as premenstrual symptoms. These symptoms typically encompass both psychological and physical manifestations.[15] The present study repored, majority of female suffered from pre-menstrual symptoms;

abdominal bloating (17.45%), joint-muscle pain (14.92%), followed by: fatigue (11.55%), dizziness (11.31%), poor-concentration (9.868%), breast heaviness/tenderness (8.544%), irritability (8.544%), nausea and vomiting (4.091%), depression (4.693%), headache (3.610%), insomnia (1.685%), food and/or cravings (1.324%), anxiety (0.842%) were reported. Another study found most frequent occurring symptoms were irritability, leg cramps and abdominal pain.[26] Similar symptoms were found in an Indian study in 2010.[25]

Our study found that women adopted different strategies to manage dysmenorrhea such as taking antispasmodics medication (8.015%), followed by warm beverage (27.48%), warm bag (2.672%), dietary pattern (0.763%), ayurvedic/ homeopathy treatments (6.107%) and home remedies (17.94%). However, the most adopted strategy was bed rest (37.02%). Similar to our study findings, a study conducted among Taiwanese women reported, most effective strategies in both groups were found to be paracetamol and heat bag.[35] Another study from Pakistan found, women (43%) adopted household remedies. The household remedies consisted of hot water pads, heating pads and green tea to sooth the pain.[36] Similar to that, another study revealed that nonpharmacological management strategies were most popular (95.1%); of these, heat application (79%), rest (60.4%), hot shower/bath (40.9%), and exercise (25.7%) were most common.[37] In a study conducted by Hillen et al., the most frequently employed medication among individuals reporting dysmenorrhea was simple analgesics, with 53% opting for them, followed by nonsteroidal anti-inflammatory drugs (NSAIDs), which were used by 42%.[38] However, a study indicated the reason of not seeking medical treatment, hence, women tried coping strategies of a cognitive nature such as trying to ignore the symptoms.[2]

Limitations

In terms of the study's limitations, very few variables were examined. Numerous variables that could impact the menstrual cycle were overlooked, including family history, menstrual flow, blood clot passage, smoking, obesity, stress, and parity. The results of this study should only be interpreted as illustrating trends because it was restricted to two types of tribal community. The primary contribution of this study was to provide insight for future research in this area, which should use more rigorous designs to address the issues mentioned above.

CONCLUSION

This study revealed that 69.25% of the tribal women suffered from Dysmenorrhoea. Our study found family history of dysmenorrhoea and presence of clot factors associated with the dysmenorrhea. According to this study, tribal women are not well-prepared to deal with dysmenorrhea. The current findings not only clarify the detrimental effects of social stigma on menstrual health literacy, but they also have significant implications for evaluating and reforming current menstrual education standards. Despite its adverse impact on females' daily activities, academic performance, and psychological wellbeing, the majority of females did not seek formal medical advice, and they perceived it as a normal physiological cycle.

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