



Research paper

The Financial Ramifications of Dysmenorrhea: A Cross-Sectional Study on Employed Women in Chennai

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KEYWORDS

- Dysmenorrhea
- Financial Stress
- Prevalence
- Absenteeism
- Working
- Women

ABSTRACT

Introduction

Dysmenorrhea is a common menstrual disorder that significantly impacts the quality of life and productivity among working women. This study aims to evaluate the prevalence and financial stress among working women due to dysmenorrhea in Chennai, while also understanding the contributing factors and identifying effective coping strategies.

Materials and Methods

A descriptive cross-sectional study was conducted over two months, involving a sample of 102 working women aged 18 to 50 years. Data were collected through an online survey distributed throughout the Chennai district, which focused on demographics, characteristics of dysmenorrhea, average spending on medications, and coping strategies. The data were subsequently analyzed using SPSS software and Microsoft Excel.

Results

The findings revealed that 75.5% of respondents experienced dysmenorrhea, with an average pain score of 5.4. The average annual indirect cost due to absenteeism was found to be 9,700.84 INR, which is significantly tenfold higher than the average direct costs of 913.56 INR. Additionally, a notable correlation was identified between pain severity and factors such as age, duration of pain, and frequency of hospital visits. There was also a concerning lack of awareness regarding effective dysmenorrhea management, as 50.9% of participants reported using non-prescription medications, while only 18.6% utilized prescription drugs.

Conclusion

The financial burden of dysmenorrhea presents substantial challenges for women in maintaining their productivity. Enhanced public awareness and education on effective management strategies are essential to minimize the disorder's impact on quality of life.



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1. Introduction

Dysmenorrhea, commonly referred to as menstrual pain, is a prevalent condition among adolescents that often goes unrecognized and untreated. It is estimated to affect between 70% and 93% of young women (Sachedin & Todd, 2020). Dysmenorrhea is typically classified into two categories: primary and secondary. Primary dysmenorrhea, a common gynecological issue, can cause significant pain without any identifiable pelvic pathology (Szmids et al., 2020). Research indicates that women experiencing dysmenorrhea have elevated levels of prostaglandins, particularly PGF₂ α , in the endometrium, which correlates with menstrual cramps, pain intensity, and accompanying symptoms. The synthesis of these prostaglandins is influenced by the arachidonic acid cascade and regulated by progesterone levels (Itani et al., 2022).

Dysmenorrhea, affecting 50-90% of menstruating women globally, significantly impacts working women, with severe cases reported in 10-20% of individuals. This condition leads to absenteeism as women may take sick leave during their menstrual periods, while presenteeism can diminish productivity and concentration even when they are present at work. The chronic pain associated with dysmenorrhea also adversely influences quality of life, contributing to emotional distress, stress, and anxiety. Factors such as age, lifestyle, and cultural attitudes toward menstruation play a crucial role in the prevalence and impact of this condition on women's work and overall well-being (Akin, 2021; Sinha, 2019).

A study conducted in Portugal found that 8.1% of girls reported missing school or work due to menstrual pain, with 65.7% indicating that it impacted their daily activities. Alarmingly, only 27.9% sought medical assistance. Primary dysmenorrhea is a leading cause of absenteeism in both educational and professional settings, adversely affecting the quality of life, inducing psychological stress, and restricting daily activities (Guimarães & Póvoa, 2020). This condition can hinder educational and career advancement, ultimately limiting economic opportunities for women. Frequent short-term absenteeism from school and work can diminish productivity and lead to significant financial repercussions (MacGregor et al., 2023).

Several factors have been identified as associated with dysmenorrhea, including family history, premenstrual syndrome (PMS), early menarche, a stressful lifestyle, physical inactivity, and low self-esteem (Barcikowska, 2020; Hu, 2020).

Approximately 10% of dysmenorrhea cases are secondary, arising from pelvic pathologies or medical conditions, such as anatomical abnormalities, pelvic masses, and infections. Symptoms of secondary dysmenorrhea may include worsening pelvic pain, abnormal uterine bleeding, vaginal discharge, and dyspareunia (McKenna & Fogleman, 2021).

Despite its high prevalence and detrimental effects on quality of life, the rate at which women seek appropriate medical advice remains low. Self-medication practices among women are often inappropriate and linked to adverse effects, with common medications including ibuprofen, mefenamic acid, and paracetamol. Such practices frequently result in suboptimal management due to a lack of awareness. Non-pharmacological interventions, such as heat application, hot showers, rest, and exercise, have been shown to effectively alleviate primary dysmenorrhea (Durand, 2020; Karout, 2021; Unnisa, 2022).

This study aims to evaluate the prevalence and economic burden of dysmenorrhea among working women in Chennai, while also exploring the contributing factors and identifying effective coping strategies

2. Methodology

2.1 Study Procedure

A descriptive cross-sectional study was conducted over a period of two months, from March 2024 to April 2024, to assess the economic burden of dysmenorrhea among working women. The study population comprised 102 working women aged 18 to 50 years who consented to participate, with pregnant women being excluded from the study. The primary aim was to evaluate the financial impact of menstrual cramps on working women and to assess their management strategies. Data collection was facilitated through an online survey distributed across the Chennai district. The survey included questions related to dysmenorrhea, menstruation, economic burden assessment, and the overall impact on quality of life. The data collected were initially processed using Microsoft Excel, and categorical data were represented through frequencies and percentages with the aid of the Statistical Package for Social Sciences (SPSS). The chi-square test was employed to analyze correlations between variables.

2.2 Data Collection

Data were collected using an online questionnaire distributed among working women to evaluate their economic burden associated with dysmenorrhea. The questionnaire encompassed the following domains:

Demographic Details: This section gathered information including name, age, occupation, employment status, industry, and salary.

Dysmenorrhea and Menstruation: Questions in this domain addressed the characteristics of menstrual cramps, details regarding the menstrual cycle, and the duration of pain experienced.

Economic Burden Assessment: This section focused on management strategies employed for dysmenorrhea and the associated costs incurred during treatment.

Overall Impact and Quality of Life: This domain assessed the participants' overall well-being and the impact of dysmenorrhea on their daily lives.

3. Results

Data were collected from 102 participants, and Table 1 summarizes the respondents' basic demographics and dysmenorrhea-related variables. The majority of participants were aged between 18 and 24 years (30.4%), while only 5.9% were in the 41 to 50 age range.

Table 1 Distribution of sociodemographic characteristics and dysmenorrhea variables

Variables	n (%)
Age (years)	
18-24	31 (30.4)
25-30	27 (26.5)
31-35	25 (24.5)
36-40	13 (12.7)
41-50	6 (5.9)
Working hours per day (hours)	
< 8	53 (52.0)
9-12	45 (44.1)
>12	4 (3.9)
Have you experienced dysmenorrhea?	
Yes	77 (75.5)
No	25 (24.5)
How severe is your episode of dysmenorrhea?	
Mild	34(44.1)
Moderate	29(37.3)
Severe	14 (18.6)
Duration of Dysmenorrhea	
Less than a day	42(53.9)
1-2 days	26(34.3)
3-5 days	8(9.8)
>5 days	1(2)
Age of Attaining Menarche	
<12yrs	5 (4.9)
13-15yrs	62 (60.8)
16-18yrs	32 (31.4)
>19yrs	3 (2.9)
Menstrual cycle	
<27days	32 (31.4)
28-30days	59 (57.8)
>30days	11 (10.8)
Is your menstrual cycle regular or Irregular?	
Regular	88 (86.3)
Irregular	14 (13.7)

Dysmenorrhea was reported by 75.5% of respondents, with an average pain score of 5.4 on a numerical rating scale, indicating significant discomfort that likely affects productivity. Notably, 18.6% of respondents reported experiencing severe pain due to dysmenorrhea, and 13.7% indicated having irregular menstrual cycles. Additionally, 34.3% of participants experienced pain for 1 to 2 days during their menstrual periods.

Among the 102 participants, 18.6% reported using prescription medications, while 50.9% opted for non-prescription drugs, with the remaining individuals relying on home remedies. Further statistical analyses were conducted to explore correlations between the pain score and socio-demographic factors. Results revealed that age was a significant factor ($p=0.015$). Both the duration of pain and its severity demonstrated significant correlations with the pain score, yielding p -values of 0.022 and 0.0001, respectively.

The direct costs associated with dysmenorrhea were calculated based on annual expenditures on non-prescription, prescription, and home remedies. The average annual spending on non-prescription medications was found to be 255.24 INR, while that for prescription medications was 415.32 INR, and expenditures on home remedies amounted to 243 INR. Consequently, the average direct cost was calculated to be 913.56 INR. To evaluate the indirect costs related to dysmenorrhea, the human capital approach was employed. By considering respondents' absenteeism and their daily salary, the analysis revealed an average total indirect cost of 9,700.84 INR. Table 2 describes the average annual direct and indirect costs involved and the p value after correlating different dysmenorrhea variables with Pain score.

Table 2 Average annual direct and indirect cost and p value analysis

Annual Direct Cost Characteristics	Mean (INR)
Amount Spent on Non-Prescription Medicines	255.24
Amount Spent on Prescription Medicines	415.32
Amount Spent on Home Remedies	243.00
MEAN Direct Cost	913.56
Annual Indirect Cost Characteristics	MEAN (per year)
Absenteeism	8.28 (days)
Salary per day	1171.6 (INR)
MEAN Indirect Cost	9700.84(INR)
Variables	p-value after correlating with the Pain score
Age	0.015
Severity of Pain	0.0001
Duration of pain	0.022
Hospital visits	0.039
p-value < 0.05 was found to be significant	

Fig. 1 illustrates the various coping strategies preferred by the study population, with resting identified as the most favoured approach, followed by the consumption of black coffee and listening to music.

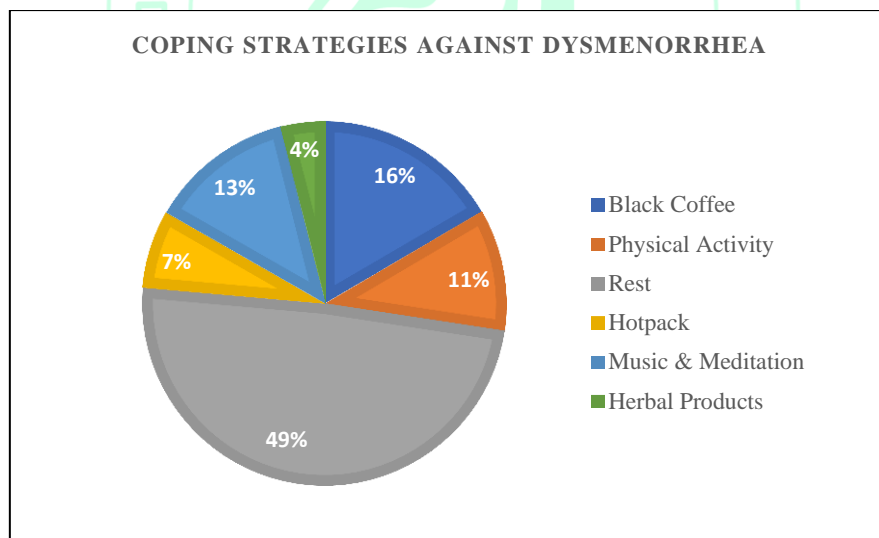


Fig. 1 Coping strategies against Dysmenorrhea

4. Discussion

According to our study, 75.5% of participants reported experiencing dysmenorrhea, aligning with global prevalence rates that range from 50% to 90% (Bakhsh et al., 2022). The data indicate that 18.6% of women suffered from severe dysmenorrhea, while 37.3% reported moderate pain, both of which significantly affect daily functioning and productivity. In comparison, a study conducted in Ethiopia by Zegeye et al. (2009) reported that 28.5% of women experienced moderate to severe pain, whereas Lee et al. (2006) in Malaysia stated, it was 6.8%.

Previous research has suggested that the prevalence of dysmenorrhea decreases with increasing age and is closely associated with early menarche. However, our study did not find a correlation between the age of menarche and dysmenorrhea incidence. Dysmenorrhea remains a significant cause of workplace absenteeism among women of reproductive age (Yesuf, 2018; Mohamed, 2012; Tangchai, 2004; Chung, 2005).

Moreover, our findings revealed that women reporting higher pain levels also sought medical attention more frequently ($p=0.039$). This correlation underscores the considerable impact of dysmenorrhea on quality of life, consistent with findings from a study conducted in Tokyo by Akiyama et al. (2017).

The economic implications of dysmenorrhea are notable, with indirect costs—such as absenteeism—vastly exceeding direct expenses related to medication and home remedies. Using the human capital approach, we found that indirect costs were nearly ten times greater than direct costs, highlighting the significant productivity losses and economic challenges faced by working women. Among direct expenditures, spending on prescription medications surpassed that on non-prescription drugs and home remedies.

Furthermore, a striking 84.3% of women in our survey reported experiencing "presenteeism," where they are present at work but unable to perform optimally due to pain. This statistic emphasizes the urgent need for workplace interventions and enhanced management strategies. To improve the accuracy of indirect cost estimates, future studies should focus on collecting precise data regarding absenteeism and productivity levels during dysmenorrhea episodes (Frick et al., 2009).

Additionally, our study found that self-medication and dietary forms of complementary or alternative therapies were utilized more frequently than consultations with healthcare providers, indicating a potential gap in healthcare access and education (Ohde et al., 2009).

5. Conclusion

In conclusion, this study advocates for increased awareness and improved management of dysmenorrhea to mitigate its negative impact on women's health and economic productivity. The study faced several limitations that could impact the generalizability and accuracy of the findings. The relatively small sample size of 102 participants may not fully represent the broader population, potentially limiting the applicability of the results. Additionally, the reliance on self-reported data introduces the risk of recall bias, which could affect the accuracy of the reported experiences and costs associated with dysmenorrhea. Furthermore, the assessment of presenteeism and its impact on productivity was not adequately measured, which may lead to an underestimation of the overall economic burden of the condition. These factors suggest that caution should be exercised when interpreting the findings, and further research with larger, more diverse samples is warranted to enhance the robustness of the conclusions.

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Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed Consent

Informed consent was obtained from all participants included in the study.

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