



## Transforming Menstrual Health: A Review of Yoga's Effectiveness in Managing Primary Dysmenorrhea

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**Abstract:** - Dysmenorrhea spans across 45 to 95% of all menstruating women in their reproductive ages because lower progesterone levels trigger elevated PGE2 levels bringing on menstrual pain. A research investigation evaluated yoga practice as a substitute therapy to manage primary dysmenorrhea so women can maintain daily activities naturally through their menstrual cycle without medication needs. As a holistic practice consisting of body postures and breathing exercises yoga regulates the nervous system to strengthen glands and muscles which subsequently eases menstrual pain. The public discourse about menstruation stays limited in our culture because people avoid discussing the subject while failing to address the issue. One thousand eighty-eight women participating in 11-year research (2011-2022) between the ages of 15 to 22 formed the subject base. The research investigated whether yoga performed better than naturopathy combined with yuvani churna and vitamin E therapies. Research outcomes indicated that yoga proved more successful than other treatments at reducing dysmenorrhea symptoms according to 93.75% of analysed studies. Specific studies found that practicing yoga activates endorphins which serve as the body's organic substances for pain management while PGE2 levels naturally decline. Yoga produces substantial effects which decrease prostaglandin levels thus providing relief from primary dysmenorrhea symptoms. Women discover yoga serves as a life-changing method which lets them manage menstrual discomfort for regular functioning even in the midst of their menstrual cycle. The results showcase the need to treat dysmenorrhea together with showing how yoga can serve as an effective alternative to medication for this condition.

**Keywords:** Dysmenorrhea, Menstruation, Yoga, Prostaglandins (PGE 2), Beta-Endorphin, Naturopathy.



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## Introduction

Through history women faced endless harassment from society which simply attributed their "Weaker Section" role to their natural reproductive organs. Social ignorance about menstruation appears to have led early cultures to mistreat women during their periods. After independence women gained equal legal status to men yet their menstrual cycle symptoms received no protections. Women need to prove how they can endure painful situations without creating any harm because that determines their eligibility for equal rights status.

Dysmenorrhea represents a painful menstrual cycle that comes with varying individual symptoms including nausea, vomiting, stomach discomfort, abdominal bloating, dizziness and cramps. A menstrual disorder describes any variation from standard performance of the menstrual cycle in women. Dysmenorrhea represents a gynaecological problem that affects between 45–95 percent of women who experience menstruation worldwide. Women experience the most effect of the disorder through their monthly cycle duration which reduces their ability to function normally and also effects immunity. (Kumar & Jhaharia, 2018) School-age girls frequently skip lessons when they need to manage

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their mental distress and sleep. (Kumar, 2018) The mood changes from dysmenorrhea often drive women to display unpredictable emotional responses along with unexplained fatigue when having their periods. The condition negatively affects their mental health while simultaneously reducing their quality of life so they end up feeling worthless. The combination of needing rest and home comfort leads women to delay important tasks because of their busy routines thus they frequently miss school or work.

Dysmenorrhea mainly have two types: Primary Dysmenorrhea and Secondary Dysmenorrhea.

Frequent periodic cramping among women which persists throughout each cycle without an associated medical condition is defined as primary dysmenorrhea. Lower abdominal pain along with back pain and leg discomfort typically starts one to two days before menstruation begins. Dysmenorrhea pain varies between mild and severe levels while lasting between 12 and 72 hours and may include other symptoms. The manifestation of primary dysmenorrhea typically starts three years after menarche during the adolescent period there are individual variations between cases.

Secondary dysmenorrhea develops when diseases affect the reproductive system. Dysmenorrhea pain grows in intensity as time passes while remaining beyond the intensity of typical menstruation cramps. Fibroids together with adenomyosis and endometriosis cause this problem.

Researchers in this review study assess multiple treatments against yoga therapy to identify the most effective therapy option for girls suffering from this condition. Women who have this problem normally use medications to manage their symptoms even though they realize these drugs present potential risks to their health near menstruation.

The effects of naturopathy and yoga on dysmenorrhea received investigation through research by Sadhana Dauneria et. al. The study evaluated how different medications used by females for their menstrual cramps affected their condition. Studies found complete success with yoga therapy for primary dysmenorrhea patients even though analgesics achieved success in just 40% of cases. Research findings prove that yoga delivers superior therapeutic value and represents an optimal replacement for dangerous prescribed medications.

Yoga takes its name from the Sanskrit root word "yuj" which means to unite different elements. All types of yoga practice combine Asanas with Pranayamas and meditation sessions. Through its precise combination of body movements together with respiratory techniques yoga creates the perfect exercise system. Modern society considers Yoga to be a fundamental complementary practice that leads people toward healthier lifestyles. Through yoga execution our body develops more robust glands and muscles together with better health functions through regulated nervous system function and production of beta-

endorphins which promote pain relief by lowering prostaglandin PGE2 production. Research has proven that yoga offers improvements in primary dysmenorrhea treatment.

### **Need for the Study**

Doctors have reported that dysmenorrhea occurs in 45–95% of girls between ages 15 and 49 causing substantial disruption to their regular activities. Menstruation continues affecting most women but remains under-researched because of widespread taboos against discussions about periods. Some women treat their symptoms with medications but these treatments sometimes result in unwanted side effects without providing more than temporary relief. This study examines the value of yoga as a natural treatment strategy which shows beneficial effects for dysmenorrhea. Through physical postures breathing techniques and meditation practices yoga leads to decreased prostaglandin (PGE2) production and higher beta-endorphin levels which ultimately decreases menstrual pain. A comprehensive study tracking 1,088 participants over 11 years proves that yoga delivers superior results than other treatments which include naturopathy and vitamin E. Women can benefit from yoga as a secure alternative to drugs because this study identifies yoga's capacity to enhance quality of life during menstruation and encourages more widespread understanding of alternative dysmenorrhea treatments.

### **Materials and Methods**

#### **Study Design**

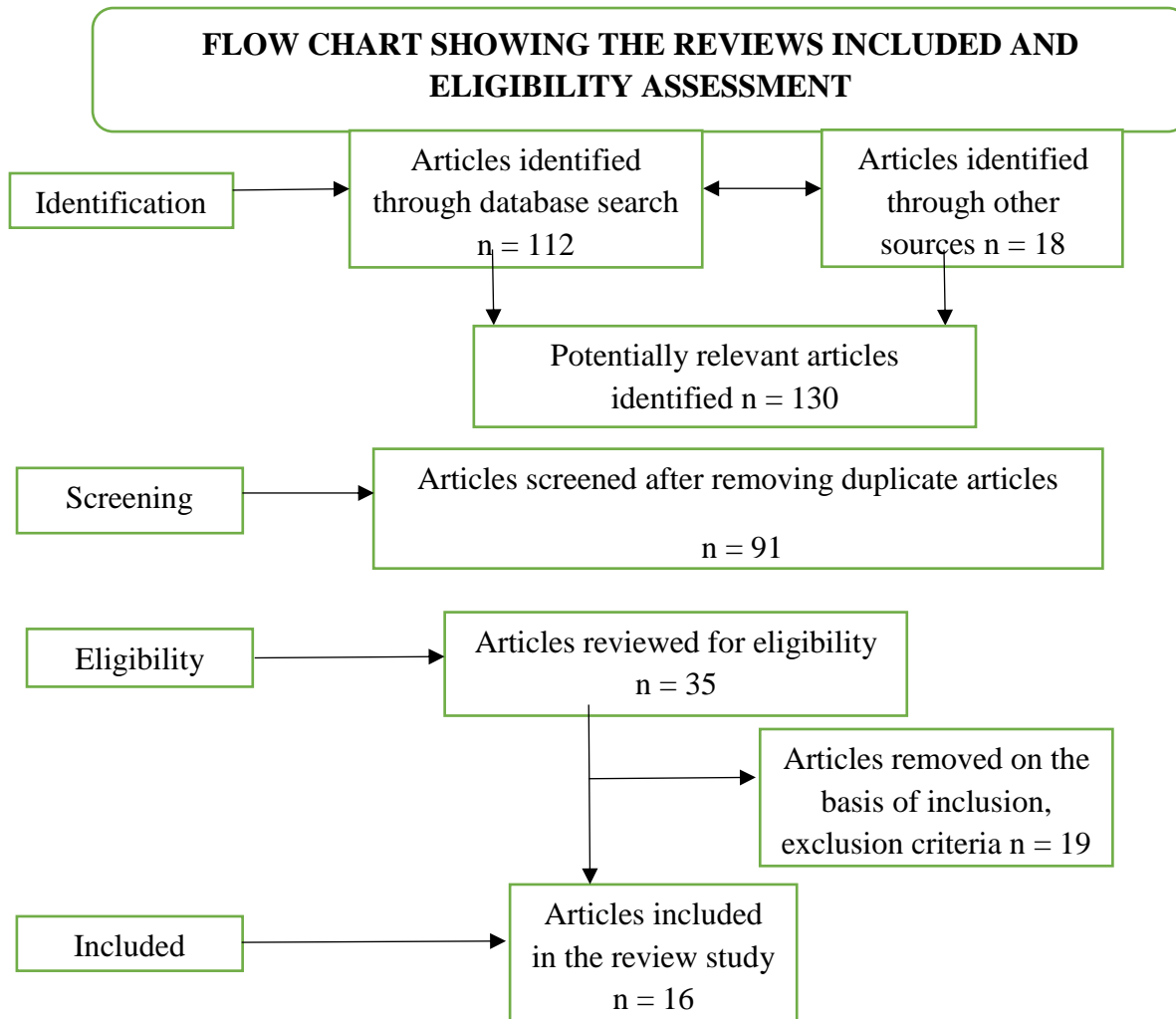
Multiple database reviews presented information in the current study regarding yoga effectiveness and alternative therapy outcomes for primary dysmenorrhea. The research involved retrieving reviews from 2011 to 2022 which featured 1,088 participants selected between the ages of 15 and 22.

#### **Search Strategy**

Multiple database reviews presented information in the current study regarding yoga effectiveness and alternative therapy outcomes for primary dysmenorrhea. The research involved retrieving reviews from 2011 to 2022 which featured 1,088 participants selected between the ages of 15 and 22.

#### **Information Extraction**

Expert reviewers applied their specified criteria to select studies from the abstracts which they reviewed. The processing of extracted article data took place after researchers determined the content quality. The information checklist of the research contained author names and publication year together with specified sample size methodology specific research groups major treatment method, and therapy duration.



### Inclusion Criteria

1. Research with females aged 15 to 22 years that were published between 2011 and 2022.
2. Research utilizing yoga as an intervention, that is, yoga practiced as an alternative therapy, either in its entirety or in part through the use of asanas, pranayamas, and meditation.
3. Research that was specifically concerned with primary dysmenorrhea.

2. Research that was released before 2011 was not included.
3. The pre and post-menstrual symptoms will not be taken into consideration; only those that are present throughout the menstrual cycle will be.

### Exclusion Criteria

1. Women who were over the age of 22, or in later adulthood, were excluded.

## Results

### Description of Included Studies

In this review study, a total of 16 papers were included, five of which are true experiments, three clinical trial, one quasi-experimental, four of them are based on adolescents, and three comparative studies.

The core of the papers cited in this review article are presented here:-

S. NO.	AUTHOR / YEAR OF PUBLICATION	STUDY DESIGN / METHODOLOGY	INTERVENTION / FREQUENCY OF INTERVENTION	OUTCOMES OF THE STUDY / FINDINGS		CONCLUSION
				Before	After	
1.	Sadhna Dauneria et. al. (2014)	56; <b>Yoga group:</b> 17, Random division in 3 groups, Dallas questionnaire	<b>Intervention:</b> Yogic modules. <b>Duration:</b> 3 months <b>Frequency:</b> 30 minutes everyday	100% have periods pain	88.23% (absence of pain) 40% relief (Placebo)	Yoga is more effective than medications and is more superior to naturopathy.
2.	Zahra Rakhshae et. al., (2011)	92; <b>Age:</b> 18 to 22 yrs., <b>Study:</b> 50, <b>Control:</b> 42; Pre-Post-test design, Menstrual characteristics questionnaire method and VAS were used to assess pain level.	<b>Intervention:</b> Three yoga poses – Cobra, Cat And Fish Pose. <b>Duration:</b> 3 months	Suffering from PD	Significant improvements were seen in the analysis of post-test as compared to pre-test.	Yoga reduced the severity and duration of PD and even practicing only three yoga poses can do this.
3.	Usha Nag et. al.,(2013)	113; <b>Study:</b> 60, <b>Control:</b> 53, semi-structured questionnaire, (NRS), (PSS).	<b>Intervention:</b> Yoga modules <b>Duration:</b> 12 weeks	Suffering some sort of pain	88% (complete pain relief) 12% (mild)	Yoga control psychosocial stress and pain and also helps to drop absenteeism.
4.	Vasantha et. al., (2020)	300; Quasi experimental study, Random Sampling Method, Equal study and control groups.	<b>Intervention:</b> Yogasanas <b>Duration:</b> 3 months	79.3% (moderate) 13.3% (severe)	100% reported mild pain	Yoga improves health and decrease severe pain, is effective and time saving.
5.	Julaecha, Julaecha et. al. (2020)	33; Pre-Post-test design, (NRS), ANOVA test	<b>Intervention:</b> Yoga movements <b>Duration:</b> 2 months	<b>Mean</b> 5.8 (1.6)	<b>Mean</b> 2.7 (1.3)	Yoga helps in reducing symptoms of PD and sleep problems.
6.	SD Archana et. al.,(2018)	30; Pre-Post study design, NPI scale, Menstrual Symptom Questionnaire	<b>Intervention:</b> Surya Namaskar <b>Duration:</b> 12 weeks <b>Frequency:</b> 3 to 24 rounds	<b>Mean</b> 6.86 (NPI)	<b>Mean</b> 1.7 (NPI)	SN stretch and activate the muscles to 95% and reduce pain in PD.

7.	Yuni Kusmiyati et. al., (2019)	60; Divided equally, Pain measurement sheet, (NRS), Wilcoxon test.	<b>Intervention:</b> Yoga relaxation exercises <b>Frequency:</b> 30 minutes using android app.	Mean of study and control groups were at same level.	Mean (reduction in pain) <b>Study:</b> 1.73 <b>Control:</b> 0.95	Yoga is effective in reducing the pain even with the help of android application.
8.	Sri Sumarni et. al., (2020)	30; Pre-Post-test design, <b>Study:</b> Yoga, <b>Control:</b> Analgesics, Observation sheets, Blood tests, t-test.	<b>Intervention:</b> Yoga Murottal <b>Frequency:</b> 20 min. during periods, 2 times a week later on.	<b>Beta-endorphins</b> Both groups were at same level.	<b>Beta-endorphins</b> (Increase) <b>Study:</b> 52.9 ng/ml <b>Control:</b> 47.1 ng/ml	Yoga helps in reducing the pain in dysmenorrhea and increases beta-endorphin level.
9.	Kalpana Kuber et. al., (2021)	40; Randomised controlled trial, Simple random sampling, Wilcoxon Test, Mann Whitney.	<b>Intervention:</b> Yoga therapy and Yuvani churna <b>Duration:</b> 2 months <b>Quantity:</b> 2.5 gm. (At bed time with luke warm water.	All were suffering from PD	(Improvement) 73.6% (moderate) 21.6% (mild) None of them reported absence.	Yoga showed significant improvements in pain and other parameters.
10.	Shraddha Prabhu et. al., (2019)	78; <b>Study:</b> 40, <b>Control:</b> 38, <b>Age:</b> 18-22 yrs., (VMSS), Moo's MDQ, (PSS), Statistical analysis	<b>Intervention:</b> Yoga Modules <b>Duration:</b> 6 weeks <b>Frequency:</b> 4 days a week with 2 supervised sessions.	All were suffering from PD	<b>(Reduction)</b> 52.5% (complete) 27.5% (mild) 7.5% (on analgesics)	Yoga is helpful in reducing pain and can be used as a cost-effective home remedy.
11.	Bunga Carolin et. al., (2022)	24; <b>Age:</b> 15-18 yrs., Quasi experimental design, Pre-Post study without control group, purposive sampling, along with NRS and statistical analysis were used.	<b>Intervention:</b> Yoga Exercises <b>Frequency:</b> 3 days a week (2 times), 15 minutes for each exercise.	<b>Mean:</b> 2.92	<b>Mean:</b> 1.67 (decreased to)	Yoga exercise can be used as an alternative therapy as an effective and a non-pharmacological treatment.
12.	Octavia N.S. et. al., (2020)	32; Experiment with two groups, NRS and mean with t-test was used for data analysis.	<b>Intervention:</b> Yoga practices and Vitamin E	Mean of yoga and Vitamin E groups were taken.	Mean of yoga group was 1.438 and vitamin E group was 2.688 (reduction in pain level).	Both the treatments were effective but vitamin E is more effective as compared to yoga practices.

13.	(Kirca & Celik, 2021)	60; Randomized experimental study with control group and pretest - posttest design with females (30 experimental, 30 control) participated where pain was measured using VAS.	<b>Intervention:</b> Yoga program covered three menstrual cycles. <b>Frequency:</b> 12 sessions over 12 weeks (once per week).	All were suffering from PD	<b>Study:</b> Significant reduction in pain levels ( $p < 0.001$ ). <b>Control:</b> No significant change ( $p > 0.05$ ).	Yoga is effective in reducing menstrual pain in women with primary dysmenorrhea.
14.	(Nuryaning & Rosyati, 2022)	66; Quasi-experimental study with a non-equivalent control group design. Participants are divided equally in both the groups. Pain intensity was measured using the Wong Baker Pain Rating Scale.	<b>Intervention:</b> Yoga practice <b>Frequency:</b> Administered for 3 months, covering three menstrual cycles.	All were suffering from PD	Yoga group: Significant reduction in pain duration and intensity over the 3 months ( $p < 0.001$ ). Control group: No significant change.	Yoga effectively reduces pain duration and intensity of dysmenorrhea in 6th-grade students. It can be used as an alternative therapy for young women to manage menstrual pain.
15.	(Yang & Kim, 2016)	40; Single-blind, randomized controlled trial. Undergraduate nursing students were randomly assigned to an exercise (yoga) group or a control group, with 20 participants in each group.	<b>Intervention:</b> Yoga (The sessions included physical exercise, relaxation, and meditation) <b>Frequency:</b> 60-minute session once per week for 12 weeks. The sessions included physical exercise, relaxation, and meditation.	All participants were suffering from Primary Dysmenorrhea.	The yoga group experienced a significant reduction in menstrual pain intensity (group difference: -0.94; $p = 0.001$ ). Menstrual distress levels also significantly decreased in the experimental group (group difference: -1.13; $p < 0.0001$ ).	Yoga significantly reduces menstrual cramps and distress in female undergraduate students with primary dysmenorrhea.
16.	(Yonglitthipagon et al., 2017)	34; Randomized controlled trial. Women aged 18-22 with primary dysmenorrhea were randomly assigned to a control group or a yoga group.	<b>Intervention:</b> Specially designed yoga program. <b>Frequency:</b> Yoga for 30 minutes, twice a week, for 12 weeks at home.	All participants were suffering from Primary Dysmenorrhea.	The yoga group showed significant improvements in menstrual pain, physical fitness, and quality of life (QOL) compared to the control group.	This specially designed yoga program can be an effective complementary treatment for improving menstrual pain, physical fitness, and quality of life in women with primary dysmenorrhea.

## Major Findings of the Study

Researchers described the primary study outcomes through their review of published literature from previous research.

Researchers examined how the yoga module helped manage primary dysmenorrhea as part of their research. People in the specified age group between 15 and 22 years comprise the subject of research.

Many research studies demonstrate that yoga effectively reduces menstrual cramping. Research revealed that yoga proved superior to various other pain reduction methods in 93.75% of evaluated studies for primary dysmenorrhea treatment.

## Discussion

The efficacy of yoga modules in treating primary dysmenorrhea was examined in this study, "Transforming Menstrual Health: A Review of Yoga's Effectiveness in Managing Primary Dysmenorrhea" by using multiple review databases. The analysis reviewed 1,088 individuals between the ages of 15 and 22 who experienced dysmenorrhea. Research showed that substantial variations existed between studies. A majority of research focused on abdomen region practice which offered both breathing work and organ vibration. Physical poses strengthen both the abdomen region and the body components around it. Studies seek to perform balanced postures and breathing techniques that maintain the balanced hormone secretion process to protect the master gland from imbalances since excellent hormone functioning is essential for dysmenorrhea prevention. Yogic practice requires recitation of opening and closing prayers but research shows meditation produces dual benefits by regulating hormone function and healing symptoms of anxiety, depression and stress.

Classification of various researches in different categories on the basis of their speciality:-

### On the Basis of Severity and Duration:-

Vasantha et. al. researched how yoga practice influenced symptoms and duration along with pain levels and physical and mental health of subjects diagnosed with primary dysmenorrhea. Total participants experienced minor post-yoga instruction pain leading to the observation that the research met its effectiveness expectations as well as its efficiency standards.

A recent study led by Kirca and Celik (2021) shows that day-to-day yoga practice diminishes both the intensity and duration of menstrual pain among women who have primary dysmenorrhea. During their 12 weekly sessions the experimental group members experienced a substantial decrease ( $p < 0.001$ ) in pain level intensity which remained unchanged for the comparison group. The research shows that yoga represents a lasting non-medicinal treatment strategy for dysmenorrhea conditions.

Julaecha Julaecha et al. conducted a study during 2020 which demonstrated substantial variations between the study and control group achievements on the pain scale. Researchers found strong evidence from their pain assessment showing that yoga movements had a clear positive impact on dysmenorrhea because the pre-test averaged 5.8 (1.6) points and the post-test measured 2.7 (1.3) points.

### On the Basis of Particularity of Intervention:-

Zahra Rakhshae et. al., 2011 showed in her study that the only proven method of reducing primary dysmenorrhea pain while simultaneously easing symptoms consists of performing sequential cat, cobra, and fish poses throughout three consecutive menstrual cycles in the luteal phase.

SD Archana (2018) conducted a research study which evaluated the specific nature of the intervention known as Surya Namaskar. Painter evaluated pain intensity through NPI scale together with questionnaires and progressively lengthened the trials. The NPI scale pain score shifted from 6.86 to 1.7 across three menstrual cycles of Shavasana practice showing successful Parkinson's disease management with this intervention.

Results published by Yonglitthipagon et al. (2017) reveal that a yoga approach specifically designed for research participants generated better outcomes regarding menstrual pain reduction together with physical performance increases and life standard improvements within the 18-22-year-old female demographic with primary dysmenorrhea. Results emphasize yoga's ability to minimize primary dysmenorrhea symptoms and length yet generate positive social effects which make it an excellent alternative to medication-based treatments when coping with primary dysmenorrhea while enhancing overall patient wellbeing.

The 2019 research by Yuni Kusmiyati et al investigated only the online yoga relaxation exercise that lasted 30 minutes. Research data showed the study group achieved improvement represented by a 1.73 average score compared to the control group scoring an average of 0.95. Results reveal that relaxation techniques based on yoga effectively address the issue.

### On the Basis of Perceived and Psychosocial Stress:-

The disruptive effects of dysmenorrhea as a disorder stem from the reality that each woman dealing with menstruation faces it monthly. During her period she needs to endure both cramps as well as nausea and vomiting along with other symptomatic reactions. The symptoms create substantial perceived stress by themselves while limiting work responsibilities lead to psychosocial stress.

Studies led by Usha Nag et. al. (2013) demonstrated that yoga practices diminish menstrual period-related pain while effectively managing stress levels and reducing psycho social stress at the time of menstruation. Patients underwent three months of intervention where total pain control prevailed among 88% of patients but minor pain affected 12% of participants.

A 12-week yoga program significantly reduced pain and menstrual distress among students who suffered from primary dysmenorrhea according to (Yang & Kim, 2016). Extension testing showed that conducting 60-minute weekly yoga exercises for twelve weeks successfully decreased both menstrual pain and menstrual discomfort levels when compared to the control group. This data establishes yoga as an effective drug-free treatment.

### On the Basis of Drug Intake:-

Sadhna Dauneria led a 2014 medical pilot test that investigated statics between yoga practice and the use of analgesic drugs over three months. The effectiveness of yoga surpassed both prescription medications and fake treatment by 100%. Yoga

presents itself as a secure and affordable pain treatment choice for women who face negative responses to typical medicinal treatments during their menstrual period.

Shraddha Prabhu led an analysis together with her team. A research team studied how yoga poses affect primary dysmenorrhea in young adult females during 2019. Following six weeks of intervention 52.5% of participants achieved full relief while another 27.5% reduced their drug consumption despite experiencing minimal symptoms and the remaining 7.5% persisted in using analgesic medications. Yoga therapy researchers have validated its effectiveness in reducing menstrual discomfort while eliminating the requirement for pain medication.

#### On the Basis of Comparison:-

Compared trials of different alternative therapies against the current use of yoga allow examination of its effectiveness for menstrual pain management. When yoga was used in place of conventional therapies to treat primary dysmenorrhea, the results were as follows:

The same evaluation included pharmaceuticals alongside yoga and naturopathy therapies in Sadhana Dauneria's research. The study results showed yoga effective at 100% in treating menstrual pain compared to medication's 40% success rate.

Oktavia N.S. et al. performed research in 2020 focused on comparing the effects of yoga practices to vitamin E supplementation. The findings demonstrate that yoga produces beneficial results for menstrual pain yet vitamin E provides superior pain reduction effects.

Kalpna Kuber et. al. carried out a clinical research in 2021 to study how yuvani churna and yoga therapy together remedy primary dysmenorrhea. The treatment showed encouraging results pertaining to primary dysmenorrhea after using these principles for two consecutive menstrual cycles.

**Recent Study:** Bunga Carolin et. al. pursued research in 2022 that included analysis of 24 adolescent participants between 15–22 years old. New findings from this study added to yoga literature by showing that participants experienced an average pain score of 2.92 before yoga intervention but reduced to 1.67 after completing yoga exercises. Breathing exercises combined with physical activities demonstrate real potential for reducing menstrual pain while eliminating the need for medicinal treatment according to a recent study.

The practice of yoga produced significant effects ( $p < 0.001$ ) on dysmenorrhea duration and pain levels in sixth-grade students but did not affect the students who served as controls according to Nuryaningsih & Rosyati, 2022. The research demonstrates that yoga functions as an efficient drug-free treatment approach for dysmenorrhea while simultaneously improving student performance and alertness.

**Study on Beta-endorphins:** Natural painkillers known as prostaglandins (PGE2) create discomfort in dysmenorrhea yet the body develops natural pain reducers that excel at alleviating pain throughout the entire body. Researchers from 2022 found that Sri Sumarni's intervention group showed higher beta-endorphin production than their non-medicated control group. The study showed that yoga helps boost natural body painkillers to reduce dysmenorrhea symptoms.

## Conclusion

Primary dysmenorrhea reveals significant improvements through beta endorphin release and parasympathetic nervous system stimulation and oxygen elevation and deep relaxation practice. Through relevant research findings we can establish yoga therapy functions as a safe method which also outperforms traditional therapies during the treatment of primary dysmenorrhea. Through regulating the nerve system yoga enables users to control ailments including stress and anxiety and sadness and other associated medical conditions. Studies demonstrated beyond doubt that yoga provided effective treatment options for primary dysmenorrhea. Future investigations into secondary dysmenorrhea can draw focus from a high sample size experimental investigation.

**Conflict of interest:** There are no conflicts of interest to disclose for the author.

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**APPENDIX**

**Table 1: Nomenclature and abbreviations used in this work**

S.NO.	NOMENCLATURE	ABBREVIATION
1.	PD	Primary Dysmenorrhea
2.	PSA	Prostate Specific Antigen
3.	PGE 2	Prostaglandins
4.	VAS	Visual Analogue Scale
5.	NRS	Numeric Rating Scale
6.	PSS	Perceived Stress Scale
7.	NPI	Neuro Psychiatric Inventory
8.	ng/ml	Nanograms per mililitre
9.	MDQ	Menstrual Distress Questionnaire
10.	VMSS	Verbal Multidimensional Scoring System