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Female Students' Experiences of Abdominal Stretching for Dysmenorrhea: A Qualitative Phenomenological Study

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Abstract

Background: Dysmenorrhea is a highly prevalent menstrual health problem among female university students and often interferes with academic performance, daily activities, and emotional well-being. Although abdominal stretching exercises have been reported as effective non-pharmacological interventions for menstrual pain, little is known about students' lived experiences, perceived benefits, and challenges in maintaining these exercises.

Objective: To explore female university students' lived experiences in practicing abdominal stretching exercises as a non-pharmacological approach to managing dysmenorrhea.

Methods: A qualitative study with a descriptive phenomenological design was conducted involving two female university students experiencing moderate dysmenorrhea who had consistently practiced abdominal stretching exercises for at least two consecutive menstrual cycles. Participants were selected using purposive sampling. Data were collected through in-depth, semi-structured interviews and analyzed thematically to identify essential meanings and patterns in participants' experiences. Credibility was enhanced through member checking.

Results: Two main themes emerged: (1) perceived physical and emotional benefits of abdominal stretching, including reduced menstrual pain, increased physical relaxation, improved sleep quality, and greater emotional stability; and (2) barriers to maintaining consistent practice, encompassing menstrual fatigue, academic workload, and lack of social support. Participants consistently described abdominal stretching as providing both bodily comfort and emotional relief during menstruation.

Conclusion: Abdominal stretching exercises were perceived as a beneficial and acceptable non-pharmacological strategy for managing dysmenorrhea among female university students. However, sustained practice may require supportive environments, peer encouragement, and flexible integration into students' academic routines.

Keywords
Stretching Exercises; Dysmenorrhea; Qualitative Research; Students

Introduction

Dysmenorrhea is one of the most common reproductive health problems among women of reproductive age and is characterized by cramping pain in the lower abdomen that can interfere with physical functioning, emotional well-being, and daily activities.[1] Among female university students, dysmenorrhea frequently affects academic concentration, class attendance, and overall quality of life, particularly during the early days of menstruation.[2] Many students rely on pharmacological treatments such as analgesics to manage menstrual pain; however, repeated use may be associated with adverse effects and does not address the broader physical and emotional experiences associated with dysmenorrhea.[3]

Globally, the prevalence of dysmenorrhea has been reported to reach up to 90% among young women, with a substantial proportion experiencing moderate to severe pain.[4] In Indonesia, dysmenorrhea prevalence among adolescents and young women is estimated to range between 60% and 75%, indicating a significant public health concern.[5] Beyond pain intensity, dysmenorrhea has been associated with fatigue, sleep disturbances, mood changes, and reduced academic productivity, highlighting its multidimensional impact on students' lives.[6] These effects underscore the need for management strategies that extend beyond symptom suppression and consider physical, emotional, and contextual factors.

Non-pharmacological interventions have gained increasing attention as alternative or complementary approaches for managing dysmenorrhea. Exercise-based interventions, including aerobic activity, yoga, and stretching exercises, have been shown to reduce menstrual pain intensity through mechanisms such as improved blood circulation, reduced muscle tension, and modulation of prostaglandin activity.[7–9] Abdominal stretching exercises, in particular, are considered practical, low-cost, and easily performed without specialized equipment, making them suitable for use among university students.[10] Quantitative studies and systematic reviews have demonstrated the effectiveness of stretching and exercise interventions in reducing dysmenorrhea severity and improving physical comfort.[11,12]

Despite this growing body of quantitative evidence, existing research has primarily focused on measuring pain intensity and clinical outcomes, often overlooking the subjective experiences of women who perform these exercises. How female students perceive abdominal stretching, what benefits they experience beyond pain reduction, and what challenges they encounter in maintaining consistent practice remain underexplored.[13] Qualitative inquiry is particularly valuable in this context, as it allows for an in-depth understanding of lived experiences, personal meanings, and contextual factors that influence health behaviors.[14]

Previous qualitative studies on dysmenorrhea management have highlighted that women often evaluate the effectiveness of non-pharmacological strategies based on bodily sensations, emotional responses, and their ability to maintain daily functioning, rather than solely on numerical pain scores.[15,16] However, qualitative evidence specifically examining abdominal stretching exercises among female university students is scarce, especially within the context of physiotherapy-informed self-management strategies.

This gap limits the development of contextually appropriate, student-centered interventions that align with both clinical recommendations and students' lived realities.

Therefore, little is known about how female university students experience abdominal stretching exercises as a non-pharmacological strategy for managing dysmenorrhea, including perceived benefits and barriers to consistent practice. Addressing this gap is important to inform physiotherapy practice, particularly in campus-based health services, where preventive and promotive interventions can be integrated into student support programs.

The objective of this study was to explore female university students' lived experiences in practicing abdominal stretching exercises as a non-pharmacological approach to managing dysmenorrhea, using a qualitative phenomenological approach. The findings are expected to contribute qualitative insights that complement existing quantitative evidence and support the development of holistic, physiotherapy-informed dysmenorrhea management strategies for university students.

Methods

Study Design and Theoretical Framework

This study employed a qualitative descriptive phenomenological design to explore female university students' lived experiences of practicing abdominal stretching exercises as a non-pharmacological approach to managing dysmenorrhea. A descriptive phenomenological approach was selected to capture participants' experiences as they were perceived and articulated, without interpretative abstraction, in line with Husserlian phenomenology. This approach was considered appropriate for understanding subjective bodily and emotional experiences related to menstrual pain and exercise practices.

Research Team and Reflexivity

The interviews were conducted by the first author, a female physiotherapy lecturer with prior training in qualitative research methods and experience in women's health education. The interviewer had no teaching, supervisory, or personal relationship with the participants prior to the study. Participants were informed that the interviewer was conducting this research as part of an academic study focusing on abdominal stretching exercises for dysmenorrhea.

The researcher acknowledged an initial assumption that abdominal stretching exercises could contribute to menstrual pain relief. To minimize potential researcher bias, reflexivity was maintained throughout the study through reflective note-taking, the use of open-ended and neutral interview questions, and regular discussions with co-authors during data analysis. These strategies were applied to bracket preconceptions and ensure that the findings were grounded in participants' accounts rather than the researcher's expectations.

Participants and Recruitment

Participants were selected using purposive **sampling** based on predefined inclusion criteria: female university students aged 18–22 years, experiencing moderate dysmenorrhea, and having practiced abdominal stretching exercises for at least two consecutive menstrual cycles. Recruitment was conducted through informal announcements within the campus environment. Potential participants who met the criteria were invited to participate and provided with detailed information about the study.

A total of two participants were included. No eligible participants declined participation. The sample size was justified using the concept of information power, whereby a small number of participants may be sufficient when the study aim is narrow, the sample is specific, the quality of dialogue is strong, and the analysis is case-oriented. Data collection was discontinued when no substantially new information emerged from subsequent interviews, indicating adequate information power for the study objectives.

Setting and Context

Interviews were conducted face-to-face in a private and quiet room within the campus environment to ensure confidentiality and minimize interruptions. No third parties were present during the interviews. Participants were undergraduate students from non-health faculties, and all interviews were conducted in a comfortable and non-hierarchical atmosphere to encourage open sharing of experiences.

Data Collection

Data were collected through in-depth, semi-structured interviews lasting approximately 40–55 minutes. An interview guide consisting of 8 open-ended questions was developed to explore participants' experiences, perceived benefits, emotional responses, and challenges related to abdominal stretching exercises. Examples of guiding questions included: *"Can you describe how your body feels after performing abdominal stretching during menstruation?"* and *"What makes it difficult for you to practice abdominal stretching consistently?"*

The interview guide was pilot-tested with two female students who had similar characteristics to the study participants to ensure clarity and comprehensibility; these pilot data were not included in the analysis. All interviews were audio-recorded with participants' consent and transcribed verbatim. Repeat interviews were not conducted, as the initial interviews provided sufficient depth and clarity of experience relevant to the study aim.

Data Analysis

Data were analyzed using thematic analysis following the framework proposed by Braun and Clarke, encompassing familiarization with the data, generation of initial codes, identification of potential themes, review of themes, and final theme definition. Coding was conducted manually by the first author. Initial codes were derived inductively from the data and subsequently grouped into subthemes and overarching themes through iterative comparison.

To enhance analytical rigor, emerging codes and themes were discussed among the research team to achieve consensus and ensure credibility. An audit trail was maintained, including coded transcripts, analytic memos, and reflexive notes documenting decision-making throughout the analysis process.

Trustworthiness

Trustworthiness of the findings was ensured through several strategies. Credibility was enhanced via member checking, whereby participants reviewed interview summaries and confirmed that the interpretations accurately reflected their experiences. Dependability was supported through transparent documentation of the research process and analytic decisions. Confirmability was strengthened by reflexive practices and peer debriefing among the authors. While data triangulation was not performed due to the

qualitative phenomenological design and small sample, thick description was used to support transferability by providing sufficient contextual detail.

Ethical Considerations

This study involved non-invasive qualitative procedures in the form of in-depth interviews and posed minimal risk to participants. In accordance with institutional policy, formal ethical committee approval was not required for this type of qualitative study. All procedures were conducted in line with the ethical principles of the Declaration of Helsinki. Prior to participation, all participants received a clear explanation of the study objectives, procedures, potential risks, and their rights as research participants. Written informed consent was obtained from all participants. Confidentiality and anonymity were strictly maintained, and participants were informed of their right to withdraw from the study at any time without any consequences.

Results

Analysis of the in-depth interview data resulted in two main themes and six subthemes that captured participants' lived experiences of practicing abdominal stretching exercises as a non-pharmacological approach to managing dysmenorrhea. The themes reflected both the perceived physical and emotional benefits of abdominal stretching and the challenges encountered in maintaining consistent practice**.** An overview of the themes and subthemes is presented in Table 1.

Table 1. Summary of Themes and Subthemes Derived from Participants' Experiences

Theme	Subtheme	Illustrative participant statements	Analytical description
Perceived physical and emotional benefits of abdominal stretching	Reduction of menstrual cramps	"The cramps were much less on the second day." (P1); "My abdomen felt lighter and less painful." (P2)	Participants reported a noticeable reduction in the intensity and frequency of menstrual pain following regular abdominal stretching practice.
	Physical relaxation and comfort	"My body felt relaxed after exercising." (P1); "I slept better after stretching." (P2)	Abdominal stretching was perceived to induce bodily relaxation, reduce muscular tension, and improve sleep quality during menstruation.
	Emotional stability	"I was not as sensitive as usual." (P1); "I felt calmer and less irritable." (P2)	Pain relief was closely linked with improved emotional regulation, contributing to greater mood stability throughout the menstrual period.
Barriers to maintaining exercise consistency	Fatigue during menstruation	"When I feel tired, I sometimes skip stretching." (P1); "I avoid exercise when I have a headache." (P2)	Menstrual-related fatigue and accompanying physical discomfort reduced participants' motivation to engage in consistent exercise.
	Academic workload	"Assignments and a busy schedule make me forget." (P1); "There is little time after classes." (P2)	Competing academic responsibilities limited available time and attention for maintaining regular stretching routines.
	Lack of exercise partner	"Motivation is lower when exercising alone." (P1); "I feel more motivated when there are friends." (P2)	The absence of social or peer support negatively influenced exercise adherence and sustained motivation.

As summarized in Table 1, participants' experiences clustered into two overarching themes, highlighting both the perceived benefits of abdominal stretching and the contextual barriers that influenced adherence.

Theme 1: Perceived Physical and Emotional Benefits of Abdominal Stretching

Both participants consistently described noticeable physical relief after performing abdominal stretching exercises during menstruation. Reduction in menstrual cramps was particularly evident on the second day of menstruation, which participants identified as the period when pain was usually most intense. Participants reported a sensation of reduced abdominal tightness and overall bodily lightness following the exercises.

In addition to pain reduction, participants emphasized physical relaxation and improved sleep quality. Stretching was described as promoting a sense of bodily calmness, enabling participants to rest more comfortably at night. This physical relaxation appeared to extend beyond the immediate post-exercise period and contributed to improved daily functioning during menstruation.

Participants also highlighted emotional benefits**,** including reduced irritability, increased calmness, and greater emotional stability. They described feeling less emotionally sensitive compared with previous menstrual cycles when stretching was not practiced regularly. These emotional changes were perceived as closely linked to pain relief and bodily comfort, allowing participants to maintain concentration and engage more effectively in academic activities.

Theme 2: Challenges in Maintaining Exercise Consistency

Despite recognizing the benefits of abdominal stretching, participants reported several barriers to consistent practice. One prominent challenge was fatigue during menstruation**,** including feelings of physical exhaustion and headache, which occasionally led participants to skip stretching sessions even when they believed the exercises were beneficial.

Academic workload also emerged as a significant barrier. Participants described demanding schedules, assignments, and time constraints as factors that limited their ability to prioritize stretching exercises consistently. Stretching was sometimes perceived as secondary to academic responsibilities, particularly during periods of increased coursework.

Finally, participants identified a lack of social or peer support as a factor affecting motivation. Exercising alone was described as less motivating, whereas the presence of peers or the possibility of group-based activities was perceived as encouraging. This suggests that social context played an important role in shaping adherence to abdominal stretching practices.

Overall, the results indicate that abdominal stretching exercises were perceived as beneficial in alleviating both physical and emotional aspects of dysmenorrhea. However, the sustainability of this practice was influenced by menstrual-related fatigue, academic demands, and the availability of social support. These findings provide a descriptive account of how female university students experience abdominal stretching within the context of their daily academic and menstrual lives.

Discussion

This qualitative phenomenological study explored female university students' lived experiences of practicing abdominal stretching exercises as a non-pharmacological strategy for managing dysmenorrhea. The findings revealed two central themes: perceived physical and emotional benefits of abdominal stretching, and challenges in maintaining consistent practice. Together, these

themes provide insight into how abdominal stretching is experienced not merely as a physical intervention, but as an embodied and contextual practice shaped by bodily sensations, emotions, academic demands, and social environments.

Perceived Benefits of Abdominal Stretching

Participants described abdominal stretching as contributing to meaningful reductions in menstrual pain, accompanied by bodily relaxation, improved sleep quality, and greater emotional stability. These findings align with previous qualitative research indicating that women often assess the effectiveness of dysmenorrhea management strategies based on changes in bodily comfort, emotional calmness, and functional capacity rather than numerical pain scores alone.[10,17] The embodied relief reported by participants supports phenomenological perspectives that emphasize the lived body as central to the experience of health and illness.[18]

The emotional benefits identified in this study—such as reduced irritability and enhanced calmness—are consistent with evidence suggesting that stretching and light physical activity can promote emotional regulation during menstruation.[19,20] Improved sleep quality reported by participants further reinforces the multidimensional impact of abdominal stretching, as sleep disturbance is a common but often overlooked component of dysmenorrhea-related burden.[21] These findings suggest that abdominal stretching may support both physical and psychological well-being, which is particularly relevant for university students balancing academic responsibilities during menstruation.

Barriers to Consistent Practice

Despite acknowledging its benefits, participants experienced difficulty maintaining regular abdominal stretching practice. Menstrual-related fatigue emerged as a prominent barrier, reflecting prior qualitative findings that physical exhaustion and headache during menstruation can limit engagement in physical activity.[22] Academic workload also influenced adherence, with participants prioritizing coursework over self-care practices. These finding echoes qualitative studies demonstrating that competing academic and time demands often constrain health-promoting behaviors among university students.[23]

The absence of social or peer support further reduced motivation to exercise consistently. Participants reported greater motivation when stretching was performed with peers, highlighting the social dimension of health behaviors. Previous studies have shown that peer-supported or group-based exercise interventions can enhance adherence, enjoyment, and emotional engagement, particularly among young women.[24] These findings underscore the importance of considering social context when designing non-pharmacological dysmenorrhea interventions.

Implications for Physiotherapy Practice

From a physiotherapy perspective, the findings suggest that abdominal stretching can be positioned as a preventive and self-management strategy within campus-based health services. Physiotherapists may play a key role in educating students about safe and simple stretching techniques, tailoring exercise recommendations to menstrual phases, and addressing both physical and emotional aspects of dysmenorrhea.[10,25] Importantly, the identified barriers indicate that successful implementation requires flexibility, such as short-duration programs and integration into students' academic routines.

The influence of peer support suggests that physiotherapists and campus health providers may consider group-based or peer-facilitated stretching programs**,** which could enhance motivation and sustainability. Such approaches align with holistic physiotherapy practice by integrating physical, emotional, and social dimensions of care.

Strengths and Limitations

A key strength of this study lies in its phenomenological approach, which allowed for an in-depth exploration of lived experiences that are not captured through quantitative measures alone. However, several limitations should be acknowledged. The small number of participants limits transferability, and findings reflect context-specific experiences within a single institutional setting. Additionally, reliance on self-reported experiences may be influenced by recall or social desirability bias. Nevertheless, these limitations are consistent with qualitative phenomenological research, which prioritizes depth of understanding over generalizability.

Future Research

Future studies are encouraged to employ qualitative designs with larger and more diverse samples to explore variations in experiences across different academic and cultural contexts. Mixed-methods research combining qualitative insights with quantitative outcomes—such as pain intensity, sleep quality, or activity adherence—may further strengthen the evidence base and inform the development of standardized, physiotherapy-led dysmenorrhea management programs.

Conclusion

This qualitative phenomenological study explored female university students' lived experiences of practicing abdominal stretching exercises as a non-pharmacological approach to managing dysmenorrhea. The findings indicate that abdominal stretching was perceived as beneficial not only in reducing menstrual pain but also in promoting bodily relaxation, improving sleep quality, and enhancing emotional stability. These multidimensional benefits suggest that abdominal stretching addresses both physical and psychosocial aspects of dysmenorrhea, which are central to students' daily functioning and academic engagement.

Participants' experiences also revealed important contextual barriers to sustained practice, including menstrual-related fatigue, competing academic demands, and limited social support. These barriers highlight that the effectiveness of abdominal stretching is influenced by situational and environmental factors rather than exercise type alone. Understanding these challenges is essential for designing interventions that are feasible and acceptable within the realities of university life.

From a clinical perspective, the findings support the integration of abdominal stretching into physiotherapy-informed, campus-based dysmenorrhea management programs. Physiotherapists can play a role in educating students about safe, simple stretching techniques, tailoring recommendations to menstrual phases, and encouraging supportive peer environments. Short, flexible programs and group-based approaches may enhance adherence and sustainability.

Although the study involved a small number of participants and was conducted within a single academic setting, it offers valuable qualitative insights into how female students experience abdominal stretching in everyday contexts. These insights complement existing quantitative evidence and contribute to a more holistic understanding of dysmenorrhea management. Future research using larger qualitative samples or mixed-methods designs is warranted to further examine the relationship between lived experiences, adherence, and clinical outcomes, and to inform the development of standardized, student-centered physiotherapy interventions.

Author Contribution

Asry Sulastyaningrum: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Writing—original draft.
I Made Wahyu Palguna: Methodology, Writing—review & editing, Supervision.
Claudiani Darosari: Data curation, Writing—review & editing.
All authors read and approved the final manuscript and agreed to be accountable for all aspects of the work.

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Conflict of Interest Statement

The authors declare no conflict of interest.

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Ethics Statement

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