Sapienza
International Journal of Interdisciplinary Studies
ISSN: 2675-9780

OPEN ACCESS

Signatory of DORA

Influence of menstrual symptoms in work activities in teachers and administrators of the Technical University of Ambato

Influência dos sintomas menstruais nas atividades de trabalho de professores e funcionários administrativos da Universidade Técnica de Ambato

Influencia de la sintomatología menstrual en actividades laborales en docentes y administrativas de la Universidad Técnica De Ambato

Eveline Prissila Lopez Solis
https://orcid.org/0000-0002-7103-2582
Graduate Researcher, Faculty of Health Sciences. Technical University of Ambato, Ecuador
elopez4564@uta.edu.ec (correspondence)

Eulalia Isabel Analuisa Jiménez
http://orcid.org/0000-0002-7906-7640
University Professor, Faculty of Health Sciences. Technical University of Ambato, Ecuador

ABSTRACT

Introduction: Worldwide, research has focused on women's general health, however, the topic of menstruation in the workplace has received very little attention. This research is of great importance because it seeks to know the prevalence of menstrual symptoms in the study population and to verify if it influences the reduction of their work productivity. **Methodology:** The research is quantitative, observational, descriptive, and cross-sectional, with a total population of 204 women of childbearing age between 25 and 45 years old, who were part of the administrative and teaching staff of the institution. A specific survey was designed for this study. **Results:** Abdominal pain, headache, mood changes, fatigue and difficulty concentrating demonstrated a greater association with reduced work productivity by showing a p value much lower than the established level of significance ($p = <.001$). **Conclusions:** The menstrual symptoms considered in this study do reduce the work productivity of the study population except for the symptom of diarrhea and/or constipation that did not show an association.

Keywords: Menstruation; Dysmenorrhea; Women, Working; Women's Health.

RESUMO

Introdução: Globalmente, a investigação tem-se centrado na saúde geral das mulheres, no entanto, o tema da menstruação no local de trabalho tem recebido muito pouca atenção. O presente trabalho de pesquisa é de grande importância porque busca conhecer a prevalência de sintomas menstruais na população estudada e verificar se isso influencia na redução de sua produtividade laboral. **Metodologia**: A pesquisa é quantitativa, observacional, descritiva e transversal, com população total de 204 mulheres em idade fértil entre 25 e 45 anos, que faziam parte do corpo administrativo e docente da instituição. Uma pesquisa específica foi desenhada para este estudo. **Resultados**: Dor abdominal, cefaleia, alterações de humor, fadiga e dificuldade de concentração demonstraram maior associação com redução da produtividade no trabalho ao apresentar valor de p muito inferior ao nível de significância estabelecido (p= < 0,001). **Conclusões**: Os sintomas menstruais considerados neste estudo reduzem a produtividade laboral da população estudada, com exceção do sintoma de diarreia e/ou prisão de ventre que não apresentou associação.

Palavras-chave: Menstruación; Dismenorrea; Mujeres Trabajadoras; Salud Femenina.

RESUMEN

Antecedentes: A nivel mundial, la investigación se ha centrado en la salud general de las mujeres, sin embargo, el tema de la menstruación en el lugar de trabajo ha recibido muy poca atención. El presente trabajo de investigación es de gran importancia porque busca conocer la prevalencia de la sintomatología menstrual en la población de estudio y comprobar si esta influye en la reducción de su productividad laboral. **Metodología**: La investigación es de tipo cuantitativo, observacional descriptivo de corte transversal, con una población total de 204 mujeres en edad fértil entre los 25 y 45 años, que eran parte del personal administrativo y docente de la institución. Se diseñó una encuesta específica para este estudio. **Resultados**: El dolor abdominal, dolor de cabeza, cambios de humor, fatiga y dificultad para concentrarse demostraron mayor asociación con la reducción de productividad laboral al mostrar un valor de p bastante menor que el nivel de significancia establecido (p= <.001). **Conclusiones**: Los síntomas menstruales considerados en este estudio sí reducen la productividad laboral de la población de estudio con excepción del síntoma de diarrea y/o estreñimiento que no mostró asociación.

Palabras clave: Menstruación; Dismenorrea; Mujeres Trabajadoras; Salud Femenina.

INTRODUCTION

At the beginning of a woman's menstrual cycle, the endometrium, which is a hormone-dependent tissue, prepares to receive a pregnancy. When this does not occur, the endometrial tissue surrounding the uterine cavity is shed, causing an inflammatory response and releasing fragments of tissue, blood and fluid through the vagina. This process, which normally occurs every month, is known as menstruation (Cousins & Saunders, 2023). Between the stage of menarche and menopause, most women menstruate and this can have a significant impact on physical, mental and social well-being (Critchley et al., 2020).

During the menstrual cycle, various changes occur in a woman's body caused by significant hormonal fluctuations. Therefore, menstruation-related symptoms are one of the most common problems faced by women (Mitsuhashi et al., 2023). Hormonal fluctuations of the menstrual cycle influence a multitude of processes, including sensory perception, sexual desire, cognitive function, and emotional processing (Judkins et al., 2020). Menstrual symptoms have a deleterious effect on different aspects of women's lives around the world, including relationships with family and friends, performance at school or work, and recreational and social activities (Kirmizigil & Demiralp, 2020).

The prevalence of menstrual symptoms ranges from 17% to 90% based on 40 investigations of the general female population worldwide (Söderman et al., 2019). Almost 85% of young women suffer some degree of menstrual pain and it is called dysmenorrhea when it is severe, it affects daily activities and requires medical treatment. Even in its most severe forms, menstrual pain is very common and can influence a woman's quality of life (Xholli et al., 2021). These symptoms and menstrual pain can cause absenteeism, reduced performance and consequently have important socioeconomic repercussions (Abreu-Sánchez et al., 2020).

Globally, research has focused on women's overall health, however, the topic of menstruation in the workplace has received very little attention. The topic of how menstruation affects productivity at work and its impact on women's careers is rarely discussed or studied (Mbongo et al., 2023). No sufficient information or significant statistics have been found about this problem in Ecuador. In a study carried out in Colombia, it was found that the prevalence of dysmenorrhea ranges between 73%, 67% of women who generally self-medicate to reduce symptoms such as severe pain, nausea, vomiting, diarrhea and others, 32.5% have been absent from work due to symptoms (Yañez Natalia et al., 2010).

In a study conducted in Portugal, 8.1% of women reported missing school or work due to menstrual pain, which impacted daily activities in ~65.7% of cases (Guimarães & Póvoa, 2020). There are studies on health-related quality of life and relevant social and economic burdens due to menstrual symptoms in Japan. The total annual economic burden due to menstrual symptoms among Japanese women was estimated at US$8.6 billion, of which loss of work productivity accounted for 72% of the burden (Shimamoto et al., 2021). For this reason, the present research work is of great importance because it seeks to know the prevalence of menstrual symptoms in the study population and to verify if this influences the reduction of their work productivity.

METHODOLOGY

Type of study

The research is quantitative, observational, descriptive, cross-sectional. It focuses on describing the influence between menstrual symptoms and the work activities of the teaching and administrative staff of the Technical University of Ambato (UTA). This approach allows for a detailed understanding of how menstrual symptoms affect work performance at a specific point in time.

Place and period of investigation

The study was carried out in the province of Tungurahua, specifically in the city of Ambato in Ecuador. The research focused on women of childbearing age who are part of the teaching and administrative staff of the institution in this period, between September 2023 and February 2024. The choice of this place and research period allowed us to obtain relevant data on the influence of menstrual symptoms in a specific context and during a certain period in this region.

Population

The total population for this study was made up of 204 women of childbearing age, aged between 25 and 45 years old, who were part of the administrative and teaching staff of the Faculty of Health Sciences of the Technical University of Ambato. This age range was established due to the high probability that these women were experiencing menstrual symptoms during the study period. The Faculty of Health Sciences was selected due to its relevance in the field of health and

the importance of understanding how menstrual symptoms can affect job performance in this sector.

It was determined that the sample size needed to achieve an adequate level of precision in the results would be 134 participants using the standard sample size calculation formula for finite populations. This sample size was considered representative and sufficient to obtain meaningful conclusions about the relationship between menstrual symptoms and work activities in this specific context.

Inclusion and exclusion criteria

Inclusion criteria:

• Women of childbearing age, aged between 25 and 45 years.

• Administrative or teaching staff at the Faculty of Health Sciences of the Technical University of Ambato.

Exclusion criteria

• Women with amenorrhea due to gynecological pathologies or surgical interventions.

• Women outside the specified age range (under 25 years or over 45 years).

• Participants who were not willing to complete the questionnaires.

Research Hypotheses

Menstrual symptoms are associated with reduced work performance of the teaching and administrative staff of the Faculty of Health Sciences.

Instrument Validation Report

Through the bibliographic review of the data collection instruments in different studies, the specific Quality of Life Questionnaire related to menstruation CVM-22 carried out by Torres-Pascual et al., (2019) was taken as a reference and a specific survey was designed for this study, which consisted of 24 items that were classified into several categories relevant to the objective of the research:

• **Sociodemographic data:** This section collected basic information about the participants, such as age, marital status, school preparation, and amount of time working in their current job.

• **Pathological history:** Information was collected here on any previous gynecological medical conditions that the participants may have and family gynecological history.

• **Menstrual symptoms:** This category included items related to the menstrual symptoms experienced by the participants, such as abdominal pain, mood changes, fatigue, among others, and included the following Likert-type response scale: 1= Absent, 2= Mild, 3 = Moderate, 4= Severe.

• **Impact on quality of work life:** Information was collected on how menstrual symptoms affected the quality of work life of the participants, including their ability to perform work tasks, social interactions at work, among other aspects. This category included the following Likert-type response scale: 1= Absent, 2= Mild, 3= Moderate, 4= Severe.

• **Work absenteeism:** This section inquired about the frequency and duration of work absenteeism related to menstrual symptoms, including the following Likert-type response scale: 1= Never, 2= Occasionally, 3= Regularly, 4= Frequently.

• **Coping strategies:** Here, the strategies that the participants used to cope with menstrual symptoms while carrying out their work duties were explored. This category included the following Likert-type response scale: 1= Never, 2= Occasionally, 3= Regularly, 4= Frequently.

Appropriate response scales were used to capture variability in participants' responses, and open-ended response options were included when necessary to gain a deeper understanding of certain aspects.

Reliability

To use the instrument, it was validated, a pilot test and the calculation of Cronbach's alpha coefficient were applied. The pilot test involved applying the instrument to 20% of the study's target population. This phase allowed us to identify possible problems in the understanding of the items, the clarity of the questions and the adequacy of the instrument. After the application of the pilot test, the Cronbach's alpha coefficient was calculated using the statistical software SPSS (Statistical Package for the Social Sciences). The coefficient obtained was 0.920, which reveals a high internal consistency between the elements that make up the measurement instrument.

Information Collection Techniques

The instrument was applied digitally, adapting it to the Google Forms format, where the 24 question items were included with their response options that included the respective Likert scales for each category. The survey had an approximate response time of 10 minutes.

Statistic analysis

The data collected through the survey was tabulated and analyzed using SPSS statistical software. This statistical analysis provided crucial information to understand the nature and magnitude of the association between menstrual symptomatology and work activities of the study population. To verify the hypothesis raised in this study, the Chi Square test was carried out where the association between each menstrual symptom and the reduction in work productivity was analyzed based on the responses of each participant. The alpha significance level was set at 5% ($p<0.05$).

Ethical aspects

The study was carried out in compliance with the highest ethical standards and respecting the rights and dignity of the participants. The project approval certificate was also obtained from the Ethics Committee of the Technical University of Ambato. Informed consent was guaranteed from all participants, who were fully informed about the objectives of the study, the procedures to follow, the possible risks and benefits of participating, as well as their right to withdraw at any time without penalty. Confidentiality and privacy of the information collected was ensured, using identification codes instead of names or personal information in the data collected.

RESULTS AND DISCUSSION

Sociodemographic Aspects

Table 1. Item 1: Indicate your age

	Frequency	Percentage
20-30 years old	49	36.6%
31-40 years old	55	41%
41-45 years old	30	22.3%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

The most represented group is in the 31 to 40 year old range, closely followed by the 20 to 30 year old group. These two groups comprise most of the sample, which suggests a significant presence of young and middle-aged women in the work context of the Faculty of Health Sciences of the Technical University of Ambato. On the other hand, the group from 41 to 45 years old is the least represented in the sample, which indicates a lower presence of women in this age range in the specific workplace analyzed.

Table 2. Item 2: What is your marital status?

	Frequency	Percentage
Single	39	29.1%
Married	43	32.1%
Divorced	32	23.9%
De facto union	4	3%
Common law union	16	11.9%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

The analysis of the results related to the marital status of the participants shows a diverse distribution within the sample. The most represented category is that of being married, with a percentage of 32.13% of the total sample. On the other hand, the single category also has a significant presence, representing approximately 29.1% of the sample. An interesting result is the proportion of participants who identify as divorced, which constitutes approximately 23.9% of the sample, followed by a fairly low percentage of 3% who are in a de facto union and finally 11.9% in a common law union.

Table 3. Item 3: School preparation

	Frequency	Percentage
Third Level	46	34.3%
Fourth Level	88	65.7%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

When examining the results related to the level of school preparation of the participants, a significant distribution is observed in the sample. Most participants, approximately 65.7%, have a fourth level of school preparation. On the other hand, a significantly smaller proportion of participants, around 34.3%, have a third-level level of school preparation; together, these findings highlight the high level of schooling within the faculty's teaching and administrative staff.

Table 4. Item 4: Amount of time you have been working in your current job

	Frequency	Percentage
1-2 years	25	18.5%
2-3 years	30	22.3%
3-4 years	21	15.5%
4-5 years	23	17%
5 years onwards	35	26.7%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

It is observed that most of the participants have a diversified service time, with a similar percentage in various time ranges. However, it is important to highlight that the largest proportion of participants is in the "5 years and older" category, representing 26.7% of the sample. This suggests that a considerable part of the teaching and administrative staff of the Faculty of Health Sciences of the Technical University of Ambato has significant work experience in their current position, which may indicate a high degree of job stability and commitment to the institution. On the other hand, a relatively uniform distribution is observed in the other time periods of performance in the job, although with slightly different percentages. For example, the time ranges of "2-3 years" and "5 years and up" show higher representation compared to other time ranges.

Pathological History

Table 5. Item 5: Do you suffer from any gynecological disease?

	Frequency	Percentage
No	100	74.6%
Yes (Specify which one)	34	25.4%
Specific Gynecological Disease	**Frequency**	**Percentage**
Fibroids	9	26.5%
Polycystic Ovaries	15	44.1%
Polycystic ovary syndrome	8	23.5%
Endometriosis	2	5.9%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

Most of the participants, approximately 74.6%, indicated that they do not suffer from any gynecological disease. This suggests that most participants do not have previous diagnoses of gynecological diseases or do not know that they suffer from them. However, it is notable that around 25.4% did report suffering from a specific gynecological disease. The most common diseases mentioned include uterine fibroids and polycystic ovaries, followed by polycystic ovary syndrome and endometriosis. The presence of these conditions can have a significant impact on women's health and well-being, as well as their ability to perform their job duties effectively.

Table 6. Item 6: Do you have a history of direct family members who have suffered from gynecological diseases?

	Frequency	Percentage
No	95	70.9%
Yes (Specify which one)	39	29.1%
Specific Gynecological History	Frequency	Percentage
Fibroids	10	25.6%
Uterine cancer	5	12.8%
Breast cancer	4	10.3%
Polycystic Ovaries	15	38.4%
Genital prolapse	1	2.6%
Endometriosis	4	10.3%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

Approximately 29.1% of the participants indicated having a family gynecological history of which the most common were polycystic ovaries (38.4%) and fibroids (25.6%), this suggests that the existence of symptoms during menstruation and their respective intensity could be related to the family pathological history of each participant.

Menstrual Symptoms

Table 7. Item 7: Abdominal Pain

	Frequency	Percentage
Absent	15	11.2%
Mild	39	29.1%
Moderate	49	36.6%
Severe	31	23.1%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

In general, symptoms were experienced in different degrees of intensity, highlighting the diversity of menstrual experiences within the sample. For example, abdominal pain was a common symptom, with 36.6% of participants experiencing moderate intensity and 23.1% reporting severe pain. This suggests that abdominal pain during the menstrual cycle is a significant experience for a considerable proportion of women in the study group.

Table 8. Item 8: Menstrual Bleeding

	Frequency	Percentage
Absent	0	0%
Mild	38	28.4%
Moderate	59	44%
Severe	37	27.6%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

Menstrual bleeding was also a ubiquitous symptom, with 44% of participants experiencing moderate intensity bleeding and 27.6% reporting severe bleeding. These percentages indicate that heavy menstrual bleeding is a common experience among women in the study group.

Table 9. Item 9: Bone and/or joint pain

	Frequency	Percentage
Absent	43	32.1%
Mild	38	28.4%
Moderate	27	20.1%
Severe	26	19.4%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

Bone and/or joint pain was reported among the participants in very low percentages, the majority reported not presenting this symptom (32.1%) followed by 28.4% who reported presenting it in a mild intensity, 20.1% in moderate intensity and finally 19.4% reported that it presents it in severe intensity. Which suggests that this symptom is not very significant or relevant among the participants.

Table 10. Item 10: Diarrhea and/or constipation

	Frequency	Percentage
Absent	49	36.5%
Mild	43	32.1%
Moderate	28	21%
Severe	14	10,4%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

It is important to note that most of the population reported not suffering from diarrhea and/or constipation (36.5%), a slightly smaller percentage reported presenting this symptomatology in mild intensity (32.1%) and only 10.4% reported severe intensity. This suggests that this symptom does not show a high level of prevalence in the participants.

Table 11. Item 11: Nausea and/or vomiting

	Frequency	Percentage
Absent	59	44.1%
Mild	31	23.1%
Moderate	29	21.6%
Severe	15	11.2%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

The results show that more than half of the participants reported not suffering from this symptom (44.1%), 23.1% reported it in mild intensity, 21.6% in moderate intensity and 11.2% in severe intensity. These findings suggest that the presence of this symptom is slightly significant in this population group.

Table 12. Item 12: Headache

	Frequency	Percentage
Absent	28	21%
Mild	49	36.6%
Moderate	36	26.8%
Severe	21	15.6%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

Another relevant symptom was headache, which was present with 36.6% of participants reporting a mild intensity and 26.8% experiencing a moderate intensity headache, which makes it a relevant symptom among the participants.

Table 13. Item 13: Mood changes

	Frequency	Percentage
Absent	13	9.7%
Mild	30	22.4%
Moderate	58	43.3%
Severe	33	24.6%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

It was observed that 43.3% of the participants reported mood changes of moderate intensity and 24.6% of severe intensity. This reflects a high prevalence of this symptom among the participants and could suggest that menstrual symptoms encompass not only the physical part but also the psychological and emotional part of the participants.

Table 14. Item 14: Fatigue

	Frequency	Percentage
Absent	21	15.6%
Mild	36	26.9%
Moderate	48	35.8%
Severe	29	21.7%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

The results show that there are 35.8% of the participants who responded that they suffer from fatigue in moderate intensity followed by 26.9% who reported suffering from it in mild intensity, this suggests that this symptom is common among the study population.

Table 15. Item 15: Difficulty concentrating

	Frequency	Percentage
Absent	27	20.2%
Mild	42	31.3%
Moderate	42	31.3%
Severe	23	17.2%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

The results show that the participants have difficulty concentrating in 31.3% in both mild and moderate intensity compared to 20.2% who do not present it, this suggests that there is a significant prevalence of this symptom among the participants of this study.

Impact on Quality of Work Life

Table 16. Item 16: Difficulty concentrating at work

	Frequency	Percentage
Absent	32	23.8%
Mild	36	26.9%
Moderate	47	35.1%
Severe	19	14.2%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

A variety in the degree of difficulty concentrating at work is observed among participants. A significant percentage, 35.1%, reported a difficulty of moderate intensity, followed by 26.9% with mild difficulty and 23.8% with no difficulty. This suggests that concentration at work may be impaired for a considerable proportion of women in the study group, which could have implications for their job performance and ability to fulfill their job responsibilities effectively.

Table 17. Item 17: Reduction in work productivity

	Frequency	Percentage
Absent	32	23.9%
Mild	26	19.4%
Moderate	52	38.8%
Severe	24	17.9%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

The results also show that most participants experienced some degree of reduction in work productivity during their menstrual cycle, 38.8% reported a moderate intensity reduction, followed by 19.4% with a mild reduction and 17.9% with a severe reduction.

Table 18. Item 18: Changes in labor relations

	Frequency	Percentage
Absent	50	37.3%
Mild	53	39.5%
Moderate	24	18%
Severe	7	5.2%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

On the other hand, participants reported that they experienced no changes in work relationships due to menstruation, with 37.3% indicating that this symptom was absent. However, a larger percentage, 39.5%, reported mild changes in work relationships, while 18% experienced changes of moderate intensity. This suggests that changes in employment relationships can occur and affect interpersonal dynamics in the workplace.

Work Absenteeism Related to Menstruation

Table 19. Item 19: Frequency of Absences

	Frequency	Percentage
Never	70	52.3%
Occasionally	48	35.8%
Regularly	14	10.4%
Frequently	2	1.5%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

The data shows that menstruation-related work absenteeism is not a common experience among women in the study group. 52.3% of the participants reported never being absent, this suggests that there is a possibility that, despite presenting menstrual symptoms, the participants choose to attend their jobs.

Table 20. Item 20: Duration of absences

	Frequency	Percentage
Less than a day	37	57.8%
A full day	23	35.9%
Several days	4	6.3%
Full week or more	0	0

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

Of the total of 64 participants who reported having some kind of absence, 57.8% reported being absent for less than one day, followed by 35.9% who reported being absent for a full day and 6.3% who reported being absent for several days. days. This suggests that a considerable proportion of women may miss work due to menstrual symptoms, which could have implications for work continuity and effectiveness in the work environment.

Coping Strategies

Table 21. Item 21: Go to medical check-up

	Frequency	Percentage
Never	23	17.2%
Occasionally	61	45.5%
Regularly	37	27.6%
Always	13	9.7%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

Most participants reported that they go for medical check-ups occasionally (45.5%) or regularly (27.6%) to address their menstrual symptoms.

This suggests that a significant number of women seek medical attention to manage their symptoms. However, it is notable that a considerable percentage (17.2%) indicated that they never go for a medical check-up, which may indicate a lack of access to medical care, a preference for other forms of symptom management, or a lack of knowledge of their condition. of health.

Table 22. Item 22: Use of medications

	Frequency	Percentage
Never	26	19,4%
Occasionally	46	34,3%
Regularly	28	20,9%
Always	34	25,4%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

The data shows that occasional (34.3%) and regular (20.9%) use of medications is common among participants to manage their menstrual symptoms. However, a significant percentage (25.4%) indicated that they always use medications.

Table 23. Item 23: Use of short breaks

	Frequency	Percentage
Never	17	12.7%
Occasionally	58	43.3%
Regularly	38	28.3%
Always	21	15.7%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

Most participants reported that they occasionally (43.3%) or regularly (28.3%) used short breaks to manage their menstrual symptoms. This suggests that taking time to rest during the day may be an effective strategy for some women to relieve symptoms. However, it is important to note that a small percentage (12.7%) indicated that they never use short breaks, which may indicate a lack of opportunities to do so in the work environment.

Table 24. Item 24: Seeking support from colleagues

	Frequency	Percentage
Never	43	32.1%
Occasionally	51	38.1%
Regularly	25	18.6%
Always	15	11.2%

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

Results show that seeking support from colleagues is a common strategy for some participants, with 38.1% reporting doing it occasionally and 18.6% doing so regularly. However, a considerable percentage (32.1%) indicated that they never seek support from colleagues, which may indicate a lack of trust in the work environment or a perception of stigma associated with menstrual symptoms.

Table 25. Cross Tabulation between Reduced Work Productivity and Menstrual Symptoms

Menstrual Symptoms		Reduced Work Productivity				P (<0.05)
		Absent	**Mild**	**Moderate**	**Severe**	
Abdominal Pain	Absent	13 (40.6%)	1 (3.8%)	1 (1.9%)	0 (0%)	**<.001**
	Mild	10 (31.3%)	11 (42.3%)	14 (26.9%)	4 (16.7%)	
	Moderate	9 (28.1%)	11 (42.3%)	23 (44.2%)	6 (25%)	
	Severe	0 (0%)	3 (11.5%)	14 (26.9%)	14 (58.3%)	
Menstrual Bleeding	Absent	0 (0%)	0 (0%)	0 (0%)	0 (0%)	**.003**
	Mild	15 (46.9%)	9 (34.6%)	8 (15.4%)	6 (25%)	
	Moderate	16 (50%)	10 (38.5%)	26 (50%)	7 (29.2%)	
	Severe	1 (3.1%)	7 (26.9%)	18 (34.6%)	11 (45.8%)	
Bone and/or joint pain	Absent	15 (46.9%)	12 (46.2%)	12 (23.1%)	4 (16.7%)	**.003**
	Mild	13 (40.6%)	7 (26.9%)	13 (25%)	5 (20.8%)	
	Moderate	2 (6.3%)	6 (23.1%)	11 (21.2%)	8 (33.3%)	
	Severe	2 (6.3%)	1 (3.8%)	16 (30.8%)	7 (29.2%)	
Diarrhea and/or constipation	Absent	16 (50%)	10 (38.5%)	13 (25%)	10 (41.7%)	**.142**
	Mild	6 (18.8%)	11 (42.3%)	21 (40.4%)	5 (20.8%)	
	Moderate	8 (25%)	4 (15.4%)	12 (23.1%)	4 (16.7%)	
	Severe	2 (6.3%)	1 (3.8%)	6 (11.5%)	5 (10.8%)	
Nausea and/or vomiting	Absent	22 (68.8%)	13 (50%)	18 (34.6%)	6 (25%)	**.001**
	Mild	5 (15.6%)	10 (38.5%)	12 (23.1%)	4 (16.7%)	
	Moderate	3 (9.4%)	3 (11.5%)	11 (21.2%)	12 (50%)	
	Severe	2 (6.3%)	0 (0%)	11 (21.2%)	2 (8.3%)	
Headache	Absent	15 (46.9%)	4 (15.4%)	3 (5.8%)	6 (25%)	**<.001**
	Mild	13 (40.6%)	10 (38.5%)	23 (44.2%)	3 (12.5%)	
	Moderate	2 (6.3%)	5 (19.2%)	18 (34.6%)	11 (45.8%)	
	Severe	2 (6.3%)	7 (26.9%)	8 (15.4%)	4 (16.7%)	
Humor changes	Absent	7 (21.9%)	4 (15.4%)	1 (1.9%)	1 (4.2%)	**<.001**
	Mild	14 (43.8%)	6 (23.1%)	6 (11.5%)	4 (16.7%)	
	Moderate	8 (25%)	10 (38.5%)	30 (57.7%)	10 (41.7%)	
	Severe	3 (9.4%)	6 (23.1%)	15 (28.8%)	9 (37.5%)	
Fatigue	Absent	12 (37.5%)	4 (15.4%)	2 (3.8%)	3 (12.5%)	**<.001**
	Mild	12 (37.5%)	10 (38.5%)	12 (23.1%)	2 (8.3%)	
	Moderate	5 (15.6%)	7 (26.9%)	26 (50%)	10 (41.7%)	
	Severe	3 (9.4%)	5 (19.2%)	12 (23.1%)	9 (37.5%)	
Difficulty concentrating	Absent	20 (62.5%)	2 (7.7%)	4 (7.7%)	1 (4.2%)	**<.001**
	Mild	10 (31.3%)	16 (61.5%)	12 (23.1%)	4 (16.7%)	
	Moderate	0 (0%)	3 (11.5%)	29 (55.8%)	10 (41.7%)	
	Severe	2 (6.3%)	5 (19.2%)	7 (13.5%)	9 (37.5%)	

Note. Elaborated by the authors
Source: Faculty of Health Sciences-UTA

The results obtained from the cross-tabulation between the variables of menstrual symptoms and reduction in work productivity showed an association with each other. The findings demonstrated that the symptoms of menstrual bleeding x^2 (9)= 20.24, p= .003 and bone and/or joint pain x^2 (9)= 25.29, p= .003 are associated with reduced work productivity. In addition, it is found that nausea and/or vomiting also demonstrated an association with the reduction of work productivity x^2 (9) = 32.29, p = .001.

The variables of: abdominal pain x^2 (9)= 60.32, p= <.001, headache x^2 (9)= 35.34, p= <.001, mood changes x^2 (9)= 29.53, p= <.001 , fatigue x^2 (9)= 33.02, p= <.001 and difficulty concentrating x^2 (9)= 80.36, p= <.001 were those that demonstrated the greatest association with the reduction of work productivity among the participants by showing a value of *p* significantly lower than the established significance level compared to the other variables. However, in contrast to the rest of the variables, the symptom of diarrhea and/or constipation x^2 (9) = 13.48, p = .142 did not show an association with the reduction in work productivity, demonstrating a *p* value greater than the established level of significance. The study has sought to measure the severity and prevalence of menstrual symptoms and their impact on the quality of work life of a group of women of childbearing age who work within a higher education institution. There are countless studies about the impact

of menstrual symptoms in groups of students, but there are very few studies that focus on populations of women who carry out work activities.

Approximately 74.6% of the study population indicated that they do not suffer from any gynecological disease and 25.4% did report suffering from a specific gynecological disease. The most common diseases mentioned include uterine fibroids and polycystic ovaries, followed by polycystic ovary syndrome and endometriosis. These findings agree with several studies carried out, in Spain it is revealed that among a group of students indicating prevalence of secondary dysmenorrhea, endometriosis was reported in 24 students (64.9%), followed by polycystic ovary syndrome (10 students, 27 .0%) (Abreu-Sánchez et al., 2020). Furthermore, in a study conducted in the United Kingdom, 69% of respondents reported experiencing a gynecological health condition, the most frequently reported health conditions were endometriosis (15%), polycystic ovary syndrome (11%), ovarian cysts (10%), fibroids (10%) (Sang et al., 2021).

Regarding menstrual symptoms, abdominal pain was present with 35.8% of participants experiencing moderate intensity and 23.9% reporting severe pain, as well as in a study carried out in China where, in addition to dysmenorrhea, the first three menstrual symptoms most reported were stomach pain, body pain and abdominal bulging, and their prevalence was 23.29%, 21.08%, and 21.55%, respectively (Mao et al., 2021) and another in Japan where 93 % of the population reported pain during menstruation (Maekawa et al., 2023), likewise, in another study carried out in the same country, more than two thirds of the respondents experience abdominal pain (70.6%) and around half reported back pain (51.5%) (Shimamoto et al., 2021).

Menstrual bleeding was observed in 46.2% in moderate intensity and 29.1% in severe intensity of the total population. These results are consistent with the study by Malanchuk et al., (2021) where an increase in menstrual blood loss was shown in 40.1% of the patients (407) and the mean volume was (156.9±5.33) ml. Another relevant symptom was headache, with 36.6% of participants reporting a mild intensity and 26.8% experiencing a moderate intensity headache. 43.3% of participants reported mood changes of moderate intensity, while 35.8% experienced fatigue of moderate intensity. This is in line with a study in Spain that reveals that up to 87.6% of participants reported fatigue, 67.8% felt depressed, 57.3% reported headaches, and irritability was reported in 36.4%. % of the participants (Abreu-Sánchez, Ruiz-Castillo, et al., 2020). According to Shimamoto et al., (2021) about a third of women experience fatigue (35.1%), headache (33.6%), and depressed mood (30.6%).

A study conducted on medical students in Japan showed that 15% experienced psychological distress, there were associations between menstruation-related symptoms and levels of psychological distress (Fukushima et al., 2020). Furthermore, the result of another study highlights that Japanese women also experience significant difficulties in terms of mental and psychological well-being due to menstruation. In fact, the second set of significantly represented menstrual symptoms is depressed mood, lethargy, and loss of concentration (Shimamoto et al., 2021). At a University in Romania, agitation or irritability was considered by 348 students (25.8%) as the most unpleasant symptom that could accompany pain (Sima et al., 2022). About two in five women experience diarrhea. and/or constipation (42.9%), irritation (41.9%) (Shimamoto et al., 2021). Also in Spain, according to Abreu-Sánchez et al., (2020), 30.2% suffered nausea, 27.7% suffered dizziness, 12.4% suffered constipation and 8.8% suffered vomiting, this contradicts the findings of this study where 36.4% of the population reported not suffering from diarrhea and/or constipation and an even higher percentage (51.5%) reported not suffering from nausea and/or vomiting.

The data show that work absenteeism is present with 35.8% where the participants reported being absent occasionally, followed by 52.3% who reported never being absent. Of the total of 64 participants who reported having some kind of absence, 57.8% reported being absent for less than one day, followed by 35.9% who reported being absent for a full day and 6.3% who reported being absent for several days. days. These findings coincide with those of a study carried out in Romania where it shows that the university activities of the study population were affected by 49.4%. During the menstrual period, some students did not have to miss classes, but 461 students (34.2%) generally missed one day of classes. Approximately 4.8% of students missed 2 or more days, of which 64 students (4.7%) missed 2 to 3 days and one student (0.1%) missed more than 3 days (Sima et al., 2022).

According to Abreu-Sánchez et al., (2020), 92.7% of the participants reported having attended classes with menstrual pain on some occasion during the last year and 62.8% of the participants reported having been absent during it. period due to this problem. And according to the study conducted by Schoep et al., (2019) more than 80% of all women reported presenteeism during their periods. Most participants reported that they go to a medical check-up occasionally (45.5%) or regularly (27.6%) to address their menstrual symptoms. These results show similarity with the study carried out by Schoep et al., (2019), where they found that the 45.4% had visited a doctor for menstrual problems in the past, with a total of 3,017 (9.2%) women reporting a diagnosis of a menstrual disorder, such as endometriosis or fibroids. It is observed that 34.3% use medications occasionally and 25.4% always, as in the study carried out by Azagew et al., (2020) where 73 participants (25.5%) used analgesic medications to relieve pain due to menstrual symptoms. .

Most participants reported that they occasionally (43.3%) or regularly (28.3%) use short breaks to manage their menstrual symptoms, as did a study conducted in Spain where it was shown that 68.6% of participants with dysmenorrhea also reported the need to stop and sit at some point during their period due to pain (Abreu-Sánchez et al., 2020). The results show that 38.1% occasionally sought support from their colleagues and 18.6% did so regularly. However, a considerable percentage (32.1%) indicated that they never seek support from colleagues, which is similar to the study carried out by Sang et al., (2021), which indicates that 63% of the participants explained that they chose not to talk about menstruation or gynecological health at work.

A variety in the degree of difficulty concentrating at work is observed among participants. A significant percentage, 35.1%, reported difficulty of moderate intensity, followed by 26.9% with mild difficulty. These results show a relationship with the study carried out by Abreu-Sánchez et al., (2020), 261 participants who answered questions related to the impact of dysmenorrhea on their daily life in a study carried out in Spain, 51.3% of the population reported lack of concentration in class or at work due to this problem. Most participants experienced some degree of reduction in work productivity during their menstrual cycle. 44.8% reported a moderate intensity reduction, followed by 20.9% with a slight reduction. The study carried out by Sima et al., (2022) agrees that dysmenorrhea could influence university performance by affecting various aspects. Thus, 808 students (59.9%) stated that they were not concentrating on the courses. On the other hand, 569 students (42.2%) considered that they were not able to accumulate the same amount of information when dysmenorrhea was present. Some of the students missed exams due to dysmenorrhea (4.2%) or had the opinion that the condition influenced the exam grade (18.4%).

CONCLUSIONS

In conclusion, sociodemographic factors have been found in the study population, such as, for example, a high level of education, average ages of young women (20-30 years) and middle-aged (31-40 years), a high prevalence of married and single women and a considerable percentage of women with high experience in their workplace (5 years or more). Regarding pathological factors, it has been found that there is a large percentage of women who experience gynecological diseases such as: polycystic ovary syndrome, uterine fibroids, polycystic ovaries and endometriosis.

After the corresponding analysis of association between variables, it has been proven that all the menstrual symptoms evaluated in this study population have an association with the reduction of their work productivity, except for the symptom of diarrhea and/or constipation, which showed no association. According to the results, the menstrual symptoms most associated with reduced work productivity of the participants were: abdominal pain, headache, mood changes, fatigue and difficulty concentrating. This means that the menstrual symptoms considered in this study do reduce the work productivity of the study population apart from the symptom of diarrhea and/or constipation that did not meet the required *p* value.

We found that the limitations for this research work were the reduced amount of bibliographic evidence that talks about this specific topic. Most of the bibliographies found focus on populations of female students or adolescents and mostly cover other aspects of the menstrual cycle such as premenstrual syndrome and not symptoms related to menstruation. Therefore, it is recommended to expand the study of this specific problem and in women who carry out work activities. This study aims to be a contribution to science, specifically for nursing staff, by demonstrating that this issue is an important health problem among women in this specific population which deserves to receive more attention. The study has demonstrated the need to carry out a comprehensive assessment to identify the patients' real and potential problems, as well as the pathological and risk factors that they present in order to provide the necessary nursing care in a holistic manner. The results obtained in this study will serve as a guide so that working institutions can learn about this problem that could exist among female personnel and thus, employ diagnostic strategies to determine the existence of gynecological diseases, the treatment and coping with these, as well as the menstrual symptoms that accompany them.

REFERENCES

Abreu-Sánchez, A., Parra-Fernández, M. L., Onieva-Zafra, M. D., Ramos-Pichardo, J. D., & Fernández-Martínez, E. (2020). Type of dysmenorrhea, menstrual characteristics and symptoms in nursing students in southern Spain. Healthcare (Switzerland), 8(3). https://doi.org/10.3390/healthcare8030302

Abreu-Sánchez, A., Parra-Fernández, M. L., Onieva-Zafra, M. D., & Fernández-Martínez, E. (2020). Perception of menstrual normality and abnormality in spanish female nursing students. International Journal of Environmental Research and Public Health, 17(17), 1–12. https://doi.org/10.3390/ijerph17176432

Abreu-Sánchez, A., Ruiz-Castillo, J., Onieva-Zafra, M. D., Parra-Fernández, M. L., & Fernández-Martínez, E. (2020). Interference and impact of dysmenorrhea on the life of Spanish nursing students. International Journal of Environmental Research and Public Health, 17(18), 1–13. https://doi.org/10.3390/ijerph17186473

Azagew, A. W., Kassie, D. G., & Walle, T. A. (2020). Prevalence of primary dysmenorrhea, its intensity, impact and associated factors among female students' at Gondar town preparatory school, Northwest Ethiopia. BMC Women's Health, 20(1). https://doi.org/10.1186/s12905-019-0873-4

Cousins, F. L., & Saunders, P. T. K. (2023). Editorial: Menstruation: Myths, mechanisms, models and malfunctions. In Frontiers in Reproductive Health (Vol. 5). Frontiers Media S.A. https://doi.org/10.3389/frph.2023.1158317

Critchley, H. O. D., Babayev, E., Bulun, S. E., Clark, S., Garcia-Grau, I., Gregersen, P. K., Kilcoyne, A., Kim, J. Y. J., Lavender, M., Marsh, E. E., Matteson, K. A., Maybin, J. A., Metz, C. N., Moreno, I., Silk, K., Sommer, M., Simon, C., Tariyal, R., Taylor, H. S., … Griffith, L. G. (2020). Menstruation: science and society. In American Journal of Obstetrics and Gynecology (Vol. 223, Issue 5, pp. 624–664). Mosby Inc. https://doi.org/10.1016/j.ajog.2020.06.004

Fukushima, K., Fukushima, N., Sato, H., Yokota, J., & Uchida, K. (2020). Association between nutritional level, menstrual-related symptoms, and mental health in female medical students. PLoS ONE, 15(7 July). https://doi.org/10.1371/journal.pone.0235909

Guimarães, I., & Póvoa, A. M. (2020). Primary Dysmenorrhea: Assessment and Treatment. In Revista Brasileira de Ginecologia e Obstetricia (Vol. 42, Issue 8, pp. 501–507). Georg Thieme Verlag. https://doi.org/10.1055/s-0040-1712131

Judkins, T. C., Dennis-Wall, J. C., Sims, S. M., Colee, J., & Langkamp-Henken, B. (2020). Stool frequency and form and gastrointestinal symptoms differ by day of the menstrual cycle in healthy adult women taking oral contraceptives: A prospective observational study. BMC Women's Health, 20(1). https://doi.org/10.1186/s12905-020-01000-x

Kirmizigil, B., & Demiralp, C. (2020). Effectiveness of functional exercises on pain and sleep quality in patients with primary dysmenorrhea: a randomized clinical trial. Archives of Gynecology and Obstetrics, 302(1), 153–163. https://doi.org/10.1007/s00404-020-05579-2

Maekawa, M., Miyamoto, A., Ariyoshi, H., & Miura, K. (2023). A Survey of the Menstrual Status of Female College Students. Healthcare (Switzerland), 11(8). https://doi.org/10.3390/healthcare11081108

Malanchuk, L. M., Riabokon, M. O., Malanchuk, A. S., Riabokon, S. S., Malanchuk, S. L., Martyniuk, V. M., Grabchak, T. A., & Pitsyk, I. B. (2021). RELATIONSHIP BETWEEN PATHOLOGICAL MENSTRUAL SYMPTOMS AND THE DEVELOPMENT OF EXTRAGENITAL FORMS OF LOCAL INFLAMMATION. Wiadomosci Lekarskie (Warsaw, Poland : 1960), 74(1), 64–67. https://doi.org/10.36740/wlek202101112

Mao, L., Xi, S., Bai, W., Yao, C., Zhou, Y., Chen, X., & Sun, Y. (2021). Menstrual patterns and disorders among Chinese women of reproductive age: A cross-sectional study based on mobile application data. Medicine (United States), 100(16), E25329. https://doi.org/10.1097/MD.0000000000025329

Mbongo, E. N., Miranda, H., & Haikera, H. (2023). A narrative inquiry into women's experiences of menstruation at the workplace in Namibia. Journal of Public Health in Africa, 14(8). https://doi.org/10.4081/jphia.2023.2587

Mitsuhashi, R., Sawai, A., Kiyohara, K., Shiraki, H., & Nakata, Y. (2023). Factors Associated with the Prevalence and Severity of Menstrual-Related Symptoms: A Systematic Review and Meta-Analysis. In International Journal of Environmental Research and Public Health (Vol. 20, Issue 1). MDPI. https://doi.org/10.3390/ijerph20010569

Sang, K., Remnant, J., Calvard, T., & Myhill, K. (2021). Blood work: Managing menstruation, menopause and gynaecological health conditions in the workplace. International Journal of Environmental Research and Public Health, 18(4), 1–16. https://doi.org/10.3390/ijerph18041951

Schoep, M. E., Adang, E. M. M., Maas, J. W. M., De Bie, B., Aarts, J. W. M., & Nieboer, T. E. (2019). Productivity loss due to menstruation-related symptoms: A nationwide cross-sectional survey among 32 748 women. In BMJ Open (Vol. 9, Issue 6). BMJ Publishing Group. https://doi.org/10.1136/bmjopen-2018-026186

Shimamoto, K., Hirano, M., Wada-Hiraike, O., Goto, R., & Osuga, Y. (2021). Examining the association between menstrual symptoms and health-related quality of life among working women in Japan using the EQ-5D. BMC Women's Health, 21(1). https://doi.org/10.1186/s12905-021-01462-7

Sima, R. M., Sulea, M., Radosa, J. C., Findeklee, S., Hamoud, B. H., Popescu, M., Gorecki, G. P., Bobirca, A., Bobirca, F., Cirstoveanu, C., & Ples, L. (2022). The Prevalence, Management and Impact of Dysmenorrhea on Medical Students' Lives-A Multicenter Study. Healthcare (Switzerland), 10(1). https://doi.org/10.3390/healthcare10010157

Söderman, L., Edlund, M., & Marions, L. (2019). Prevalence and impact of dysmenorrhea in Swedish adolescents. Acta Obstetricia et Gynecologica Scandinavica, 98(2), 215–221. https://doi.org/10.1111/aogs.13480

Torres-Pascual, C., Torrell Vallespín, S., Mateos Pedreño, E., & García-Serra, J. (2019). Desarrollo y validación del cuestionario específico de calidad de vida relacionada con la menstruación CVM-22. Revista Cubana de Obstetricia y Ginecología, 45(1), 48-59. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0138-600X2019000100048&lng=es&tlng=es.

Xholli, A., Simoncini, G., Vujosevic, S., Trombetta, G., Chiodini, A., Ferraro, M. F., & Cagnacci, A. (2021). Menstrual pain and elasticity of uterine cervix. Journal of Clinical Medicine, 10(5), 1–8. https://doi.org/10.3390/jcm10051110

Yañez Natalia, Bautista Sandra, Ruiz-Sternberg Jaime, & Ruiz-Sternberg Ángela. (2010). Prevalencia y factores asociados a dismenorrea en estudiantes de ciencias de la salud.. Rev. Cienc. Salud, 8(3), 37–48.

Contribution of each author to the manuscript:

Task	% of contribution of each author	
	A1	A2
A. theoretical and conceptual foundations and problematization:	50%	50%
B. data research and statistical analysis:	50%	50%
C. elaboration of figures and tables:	50%	50%
D. drafting, reviewing and writing of the text:	50%	50%
E. selection of bibliographical references	50%	50%
F. Other (please indicate)	-	