



Pelvic pain in university students: cross-section study

Dor pélvica em estudantes universitárias: estudo de corte transversal

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ABSTRACT

BACKGROUND AND OBJECTIVES: Women with chronic pelvic pain (CPP), especially when associated with other symptoms, may experience compromised quality of life and functionality. It is important to emphasize that this type of pain tends to persist and may intensify over time. Understanding CPP and its associated factors can assist in the development of early strategies aimed at minimizing this issue. The objective of this study was to identify the prevalence of pelvic pain among female students enrolled in health-related courses at a higher education institution in Salvador.

METHODS: This observational, quantitative, cross-sectional study conducted with female students from the Nutrition and Physiotherapy programs at a private university in Salvador.

RESULTS: A total of 40 students participated in the study - 24 from the Physiotherapy program and 16 from Nutrition. Most participants were between 20 and 29 years old and reported having to balance academic and work responsibilities. Pelvic pain was reported by 14 participants, although only 4 had received a medical diagnosis related to the condition. The majority rated their pain intensity as less than 5 on a 0 - 10 scale, suggesting it was not functionally limiting. The most frequently reported pain characteristic was a "stabbing" sensation. All participants indicated that their symptoms improved with rest, although pain could be triggered during specific activities.

CONCLUSION: The students reported chronic pelvic pain of mild to moderate intensity, with most lacking a formal clinical diagnosis. Identifying the profile of affected individuals is essential to ensure appropriate care and support, as well as to promote early diagnosis and effective intervention strategies.

KEYWORDS: Chronic pain, Pelvic pain, Students.

RESUMO

JUSTIFICATIVA E OBJETIVOS: A dor pélvica crônica (DPC), especialmente quando associada a outros sintomas, pode comprometer significativamente a qualidade de vida e a funcionalidade das mulheres. Ressalta-se que essa condição tende a persistir e, em muitos casos, pode se intensificar ao longo do tempo. A compreensão da DPC e dos fatores a ela relacionados é essencial para a formulação de estratégias precoces que visem minimizar seus impactos. Este estudo teve como objetivo identificar a prevalência de dor pélvica entre mulheres estudantes dos cursos da área da saúde de uma instituição de ensino superior localizada em Salvador.

MÉTODOS: Trata-se de uma pesquisa observacional, quantitativa, de corte transversal, realizada com acadêmicas dos cursos de Nutrição e Fisioterapia de uma instituição de ensino de Salvador.

RESULTADOS: Aplicou-se um questionário a 40 estudantes, sendo 24 do curso de Fisioterapia e 16 do curso de Nutrição. A maioria das participantes tinha entre 20 e 29 anos e reportou a necessidade de conciliar estudo e trabalho. A dor pélvica foi referida por 14 estudantes, das quais apenas 4 relataram possuir um diagnóstico relacionado à condição. A maior parte das participantes com dor informou intensidade inferior a 5, em uma escala de zero a 10, o que indica que, na maioria dos casos, a dor não era considerada limitante. Quanto à característica da dor, o tipo "pontada" foi o mais frequentemente mencionado. Todas as participantes relataram alívio da dor em repouso, embora esta pudesse se manifestar durante atividades específicas.

CONCLUSÃO: As estudantes universitárias avaliadas apresentaram dor pélvica crônica, de leve a moderada intensidade, sendo que a maioria não possuía diagnóstico clínico associado. Conhecer o perfil dessas mulheres é de grande relevância para viabilizar assistência adequada e acolhedora, além de favorecer o diagnóstico precoce e a implementação de intervenções eficazes.

DESCRIPTORIOS: Dor crônica, Dor pélvica, Estudantes.

HIGHLIGHTS

Pelvic pain in female university students was characterized as a stabbing pain/sensation

Chronic pelvic pain worsens during sexual intercourse

Chronic pelvic pain was present for more than a year, which reinforces the need for educational activities

INTRODUCTION

Chronic pelvic pain (CPP) is a common condition among women of reproductive age, characterized by non-menstrual pain located in the pelvis, lasting more than six months. It is a complex condition, resulting from the interaction between multiple body systems: gastrointestinal, urinary, gynecological, musculoskeletal, neurological, psychological and endocrine, as well as being influenced by sociocultural factors^{1,2}.

The estimated prevalence of CPP is 3.8% among women aged between 15 and 73 years old, a rate higher than conditions such as migraine, asthma and low back pain. In women of reproductive age, this rate can vary from 14% to 24%. CPP accounts for 10% of women seeking gynecological health care, justifies 12% of hysterectomies and more than 40% of diagnostic laparoscopies in Gynecology. Even so, it is estimated that around 60% of women with CPP have never received a specific diagnosis, and 20% have never undergone any investigation to clarify the origin of the pain^{1,2}.

The etiology of CPP can be gynecological or non-gynecological. Among the gynecological causes, the most frequent are: endometriosis, adenomyosis, uterine fibroids, pelvic varicose veins and pelvic adhesions. Non-gynecological causes include irritable bowel syndrome, chronic constipation, interstitial cystitis, psychological disorders (such as depression and anxiety) and musculoskeletal disorders. It is important to note that in many cases the pain is not associated with one identifiable anatomical factor, which reinforces the multifactorial and subjective features of CPP^{3,4}.

CPP significantly compromises quality of life, negatively influencing emotional, social, marital and professional aspects. Studies show that women with CPP have a poorer quality of life compared to those without the condition, with the intensity of pain and the presence of depressive symptoms being the main factors associated with the severity of this condition^{1,3,4}.

Despite available treatment options, such as non-steroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, hormonal contraceptives, antidepressants, anticonvulsants and psychotherapy, results are often unsatisfactory, especially when the diagnosis is not precise or when multiple comorbidities are present^{3,5}.

In this context, the present study's objective was to contribute to the understanding of CPP in young university students by identifying its prevalence among female health students at a private educational institution in Salvador. In addition to measuring the impact of pain on this population, the study aimed to support the development of preventive and care strategies appropriate to the academic context, promoting women's comprehensive health.

METHODS

A quantitative, cross-sectional observational study. The Strobe (Strengthening the reporting of observational studies in epidemiology) checklist was used to prepare the study. The research was conducted in accordance with the ethical precepts established in Resolution No. 466, of December 12, 2012, of the National Health Council (CNS - *Conselho Nacional de Saúde*),

where the Free and Informed Consent Term (FICT) was used, as the consent of the research subject and/or their legal representative free of vices, after a complete and detailed explanation of the nature of the research, its objectives, methods, expected benefits, potential risks and the discomfort it may cause, formulated in a consent form, authorizing their voluntary participation in the experiment. The project was submitted to the Research Ethics Committee of the Bahia Higher Education Maintenance Institute (IMES - *Instituto Mantenedor de Ensino Superior da Bahia*) and was approved under number 6.205.359.

Participants

The sample for this study was non-probabilistic, by convenience, and made up of students regularly enrolled in the Physiotherapy and Nutrition undergraduate courses at a private higher education institution located in Salvador. Data was collected in September 2023.

The inclusion criteria were: women aged 18 or over, regularly enrolled on these courses. Individuals with a history of recent surgery (performed in the previous three months), who were menstruating at the time of collection or who had undiagnosed genital inflammatory conditions were excluded from the research.

Collection instruments and procedures

The researchers used a structured questionnaire based on the Pelvic Health History Form of the International Pelvic Pain Society (IPPS)^{6,7}, previously validated for Portuguese. The original instrument was adapted for the purposes of this study because it contained items that were not relevant to the target population and the scope of the research.

The questionnaire included questions about age, professional or academic activity (if only studying or if also working), issues related to pelvic health, presence of a clinical diagnosis, limitations to physical activities, pain related to sexual activities, duration of pain, use of pharmacological and non-pharmacological interventions for pain relief, as well as the pain characteristics.

Data was collected through in person application of a structured questionnaire made up of objective questions with "yes" or "no" answer options, with the objective of identifying the presence of CPP and its main characteristics. The questionnaire was administered to a sample of 40 women, and the answers were recorded and analyzed quantitatively. The participants were invited on a voluntary basis, by means of an internal announcement at the institution (UniFTC University Center), from the Salvador campus, prior to the start of classes.

Statistical analysis

Descriptive analyses were carried out, showing the absolute and relative frequencies of the quantitative and qualitative variables researched. The analysis consisted of a sum of the affirmative ("yes") and negative ("no") answers for each item in the questionnaire,

followed by calculating the corresponding relative frequencies. The data was organized and stored in a database prepared in a Microsoft Excel 2016 spreadsheet.

RESULTS

A total of 40 university students were evaluated, 24 of whom were enrolled in the Physiotherapy course and 16 in the Nutrition course. Regarding age, 38 participants were between 20 and 29 years old, and only 2 were in their 30s or 40s. As for occupation, 15 students said they were exclusively dedicated to their studies, while 25 reported having been studying and working, as shown in Table 1.

The results showed that, of the 40 women interviewed, 14 reported experiencing pelvic pain, while the other 26 did not (Table 1). Of the 14 women who complained of pelvic pain, 10 had no defined diagnosis; 4 had the following diagnoses: one case of teratoma, one of endometriosis, one of overactive bladder associated with constipation, and one of kidney stones (Table 2).

As for the length of time and intensity of pelvic pain, 3 participants reported feeling pain between 3 and 6 months, 1 participant between 6 and 12 months, and 10 had been living with pain for more than a year. As for pain intensity, measured on a numerical scale of 1 to 10, with the groups subdivided into 1-5 and 5-10, the majority of participants (n=9) reported pain intensity between 1 and 5, while the others (n=5) reported pain intensity between 5 and 10 (Table 3).

There was a predominance of women who sought gynecological care to treat pelvic pain, mentioned by 8 participants. However, other strategies were also reported: 5 participants used painkillers, 4 adhered to dietary interventions, 2 consulted a urologist and 1 underwent physiotherapy (Table 4).

As for the sensation of pain, there was a predominance of the “stabbing” sensation, reported by 11 participants. This was followed by the following descriptions: “throbbing” pain (n = 8), a “burning” sensation (n = 5), pain with a “heavy” sensation (n = 4), as well as descriptions such as “piercing” (n = 3) and “cutting” (n = 3) (Table 5).

Table 1. Description of participants.

Items	n	%
Total	40	100
Course		
Physiotherapy	24	60
Nutrition	16	40
Age (years)		
20 to 29	38	95
30 to 40	2	5
Study/work		
Only studies	15	37.5
Works and studies	25	62.5
Presence of pelvic pain	14	35
Absence of pelvic pain	26	65

As for the reactions associated with pain, although all participants reported relief at rest, several additional complaints were reported. Three participants reported worsening of pain after prolonged activities; 8 reported pain during sexual intercourse; 5 described a throbbing sensation after sexual intercourse; 7 mentioned an impact on marital relations; 2 reported pain

Table 2. Description of clinical diagnoses.

Items	n	%
Total	14	100
Does not have a diagnosis	10	72
Teratoma	1	7
Endometriosis	1	7
Overactive bladder and constipation	1	7
Kidney stones	1	7

Table 3. Description of the characteristics of pelvic pain.

Items	n	%
Total	14	100
Time		
3 to 6 months	3	21
6 to 12 months	1	7
More than one year	10	72
Intensity		
1 to 5	9	64.3
5 to 10	5	35.7

Table 4. Follow-up/treatment.

Items	n	%
Total	14	100
Gynecologist	8	57.1
Analgesic	5	35.7
Diet	4	28.5
Urologist	2	14.2
Physiotherapy	1	7

Table 5. Description of the pain sensation.

Items	n	%
Total	14	100
Stabbing	11	78.5
Throbbing	8	57.1
Burning	5	35.7
Heavy	4	28.5
Piercing	3	21
Cutting	3	21

Table 6. Behavior in the face of painful symptoms.

Items	n	%
Total	14	100
Pain improves at rest	14	100
Worsening of pain after prolonged activities	3	21
Pain during sexual intercourse	8	57.1
Throbbing sensation after intercourse	5	35.7
Marital issues	7	50
Pain when sitting	2	14.2
Impediment in carrying out activities	5	35.7
Episodes of severe pain that stop spontaneously	7	50

when sitting; 5 pointed to impediment in carrying out daily activities; and 7 reported episodes of intense pain that ceased spontaneously (Table 6).

DISCUSSION

The present study identified important aspects related to the prevalence, characteristics and impact of CPP, a condition that is relevant to women's health. The study revealed that 35% of participants reported pelvic pain, 72% of which did not have a defined clinical diagnosis. This result corroborates another study⁸ which highlighted the difficulty in diagnosing CPP in women, often associated with other underlying conditions such as endometriosis or pelvic floor dysfunction.

The predominant age group of the participants (95% between 20 and 29 years old) reinforces the evidence that CPP is prevalent among young women, although often underdiagnosed. The fact that most of the participants have lived with this condition for more than a year without a diagnosis reinforces the complexity of the clinical management of this type of pain, as evidenced by a reference study⁹⁻¹².

Pelvic pain is characterized as pain below the umbilical scar which lasts five days at maximum. It is a complex complaint with a broad etiological spectrum and can be of gynecological or non-gynecological origin. For the best diagnosis, it is necessary to carry out complementary tests, including ultrasound, since the pain can be of gynecological or non-gynecological origin, classified by the organs that it may affect^{2,4,13-15}.

The prevalence of pelvic pain among the women interviewed was related to a "stabbing" sensation (78.5%) and "throbbing" (57.1%). Furthermore, other sensations were described by the participants such as burning, heaviness, piercing and cutting. These variations reinforce the multiplicity of clinical presentations of CPP, as described by reference authors¹⁴, and suggest a visceral or musculoskeletal origin.

Regarding the reaction to pain, although the participants reported an improvement in their pain during rest, they also reported pain during sexual intercourse, throbbing sensations after sexual intercourse, as well as episodes of pain of strong intensity that ceased spontaneously¹⁶⁻¹⁹.

The intensity of pain was predominantly mild to moderate (1-5 on the numerical pain scale), as reported by 64.3% of the participants. This intensity may explain the low adherence to treatment, such as physiotherapy, mentioned by only one participant. However, pelvic physiotherapy is widely recognized as an effective approach, encompassing rehabilitation techniques, manual therapy, postural exercises and interdisciplinary support¹⁷⁻²⁰.

Another relevant aspect was the impact of pain on daily activities and sexual life. Pain during intercourse (57.1%) and the presence of marital problems (50%) show how much this condition affects women's quality of life, intimate relationships and mental health.

Although 100% of the women reported that their pain improved with rest, 21% indicated that it worsened after prolonged activity, which may be an indicative of an associated musculoskeletal or inflammatory condition. In this sense, physiotherapy and postural re-education may be options that have been little explored but have the potential to offer relief^{8,21-23}.

CPP can result not only from gynecological diseases, but also gastrointestinal, urological and musculoskeletal conditions. It can also be defined as non-menstrual or non-cyclical pelvic pain, lasting for at least six months, and intense enough to interfere with daily activities and requiring clinical or surgical treatment^{20,24-27}.

Although pain syndromes affect adolescents and post-menopausal women, the highest incidence is among women in the reproductive phase. CPP is multifactorial in nature, and, due to the complex innervation of the pelvis, the involvement of different organs and systems can lead to the same clinical manifestation.

CONCLUSION

CPP is a major public health problem with a direct impact on the quality of life of millions of women. The lack of accurate diagnosis and effective treatment aggravates this situation, affecting not only physical health, but also the mental and emotional health of patients.

The data from the present study showed that CPP is present in young university women, usually with mild to moderate pain and, in most cases, without an established clinical diagnosis. Situations such as pain during or after intercourse expose the lack of adequate information and little knowledge about pelvic health in this group.

These findings reinforce the need for educational actions, strategies to promote pelvic health and greater attention from health professionals through a comprehensive approach that should also consider emotional acceptance.

Knowing the profile of women affected by CPP is essential for early diagnosis and targeting effective interventions. In addition, studies on this population need to be extended, as there are still significant gaps in the scientific literature on CPP in young women.

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