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CLINICAL ARTICLE

Prevalence of vulvodynia and risk factors for the condition in Portugal

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ABSTRACT

Objective: To investigate the prevalence of vulvodynia in Portugal and factors associated with this condition. *Methods:* In a cross-sectional study, an online survey was distributed by email and posted on a website and social networks. Women aged at least 18 years who were living in Portugal were eligible to complete the survey between June 1 and November 30, 2013. Participants had to have had symptoms for at least 6 months to be deemed to have vulvodynia. *Results:* Overall, 1229 questionnaires were included in analyses. A total of 80 (6.5%) women had vulvodynia at the time of the survey, and 117 (9.5%) had had it previously; lifetime prevalence was 16.0%. Pregnancy and type of delivery were not associated with vulvodynia. Women who had ever taken oral contraceptives were significantly more likely to have ever had vulvodynia ($P < 0.010$). Candidiasis, genital herpes, urinary tract infections, depression, and premenstrual syndrome were associated with ever having had vulvodynia ($P < 0.01$). Pain syndromes were associated with ever having had vulvodynia, especially fibromyalgia and bladder pain syndrome ($P < 0.001$). Scoliosis and hysterectomy were also significantly associated ($P < 0.01$). *Conclusion:* The prevalence of vulvodynia in Portugal is similar to that elsewhere. Three main groups of factors might lead to vulvodynia: local inflammatory factors, general pain susceptibility, and pelvic nerve interference.

1. Introduction

Vulvodynia was defined by the International Society for the Study of Vulvovaginal Disease in 2003 as "vulval discomfort, most often described as a burning pain, occurring in the absence of relevant visible findings or a specific, clinically identifiable, neurological disorder" [1]. According to the literature, the prevalence of the condition can be as high as 16% [2], and women of all ages are affected [3]. Most of the epidemiological data on vulvodynia comes from the USA; little information is available from Europe.

Vulvodynia is probably associated with several mechanisms, rather than just one. According to the definition of the condition, once an etiology is identified for a patient, the problem can no longer be classified as vulvodynia. Several factors and/or conditions have been found to be associated with vulvodynia, such as the presence of other comorbid pain disorders [4]. Their interactions are complicated and difficult to interpret. Furthermore, the associations found vary in different studies, making the problem even more complex. Many genetic and molecular studies are in progress, but furthering understanding about the impact of the disease and its associations might lead to the discovery of the mechanisms involved. The aim of the present study was to investigate the prevalence of vulvodynia in Portugal and factors associated with this condition.

2. Materials and methods

A cross-sectional study was undertaken between June 1 and November 30, 2013. Women aged at least 18 years who were living in Portugal were eligible to participate by completing an online survey. The survey was distributed to the authors' contacts by email, and these individuals were asked to send it on to their own contacts, and so on. Additionally, universities, associations, and companies were asked to distribute the survey. Social networks and personal websites were also used to direct individuals to the survey. The study was approved by the ethics committee of São João Hospital on April 22, 2013. In the first part of the survey, participants were informed of the objectives and confidentiality of the data was assured.

Women without vulvodynia answered 14 questions and those with the condition answered 29 questions. The questions concerned demographics, smoking/drinking, gynecological and obstetric history, associated conditions, presence of vulvodynia symptoms, and duration of the condition. Participants had to answer every question posed, but they could answer "don't know/not applicable". This kind of questionnaire has been previously validated by Reed et al. [5].

Usually, chronic pain is defined as lasting more than 3 months, but the definition of vulvodynia does not refer to a specific period. In the present study, a minimum duration of pain/discomfort of 6 months was considered, thus increasing specificity at a cost of a small reduction in sensitivity, a strategy that has already been used by others [6]. Differentiation between localized and generalized vulvodynia was not possible, so the condition was analyzed as a whole.

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Statistical analysis was performed using Microsoft Excel 2011 (Microsoft Corporation, Redmond, WA, USA) and SPSS version 20.0 (IBM, Armonk, NY, USA). The Fisher exact test was used for nominal variables and the *t* test for continuous variables. $P < 0.05$ was considered statistically significant.

3. Results

1229 questionnaires were included in analyses; two duplicated records were excluded. The mean age was 33.7 ± 9.90 years (range 18–66). Most women had received a higher education (1103 [89.7%]) and were white (1218 [99.1%]). There was no difference in the lifetime prevalence of vulvodynia between those with and without a higher education (174 [15.8%] vs 23 [18.3%]; $P = 0.445$).

The prevalence of present vulvodynia was 6.5% at the time of the survey (Table 1). A total of 117 (9.5%) women had had vulvodynia previously but had no pain at the time of the survey, giving a lifetime prevalence of 16.0%. The mean age of women with vulvodynia at the time of the survey was 33.0 ± 10.20 years, compared with 33.8 ± 9.99 years in those who had never had the condition ($P = 0.498$) and 33.7 ± 8.93 years in those who had had it previously ($P = 0.667$). Only 16 (1.3%) participants were older than 60 years, so numbers were too small for this age group to draw any conclusions. Otherwise, there were three peaks of prevalence: 21–25 years (9.6%); 41–45 years (9.7%), and 51–55 years (9.5%) (Fig. 1). The lowest prevalence was at 46-50 years (4.1%) (Fig. 1).

Habits such as smoking or drinking alcohol did not increase the risk of vulvodynia (Table 2). Obstetric factors—such as having had vaginal deliveries, deliveries in which forceps were used, and episiotomy/perineal lacerations—were also not linked to an increased risk of vulvodynia (Table 2). Women who had ever taken oral contraceptives were significantly more likely to have ever had vulvodynia ($P = 0.010$) (Table 2). However, the association was not statistically significant for present or past vulvodynia. Premenopausal women taking oral contraceptives at the time of the survey did not have increased risk of vulvodynia at any point (Table 2). More women who had ever taken oral contraceptives reported candidiasis than did those who had not used oral contraceptives (302 [27.7%] of 1089 vs 16 [16.3%] of 98; $P < 0.017$). There was also no association between the use of intrauterine devices or vaginal rings and vulvodynia (Table 2).

Approximately half the patients with present vulvodynia reported having had four or more episodes of candidiasis, compared with slightly more than one-fifth of those without the disorder; four or more episodes of candidiasis was significantly associated with vulvodynia in the past ($P < 0.001$), at the time of the survey ($P < 0.001$), and ever ($P < 0.001$) (Table 2). A history of genital herpes also carried an increased risk for vulvodynia in the past ($P = 0.002$) or ever ($P = 0.006$) (Table 2). Genital warts were not associated with vulvodynia (Table 2).

Having had at least four UTIs was significantly associated with previous vulvodynia ($P < 0.001$), present vulvodynia ($P < 0.001$), and ever having had vulvodynia ($P < 0.001$) (Table 2). Urinary incontinence was not associated with vulvodynia (Table 2).

Premenopausal women with premenstrual syndrome were significantly more likely to have had vulvodynia in the past ($P < 0.001$) or ever ($P < 0.001$) than were women without this syndrome (Table 2).

Several pain syndromes or conditions were associated with vulvodynia: dysmenorrhea, fibromyalgia, irritable bowel syndrome, headaches, coxofemoral joint pain, temporomandibular joint pain, and bladder pain syndrome (Table 2). Among those, fibromyalgia and BPS were associated with the highest odds of ever having had vulvodynia (Table 2). Glossodynia was not associated with vulvodynia (Table 2).

Women with depression were more likely to have had vulvodynia in the past ($P = 0.022$), have the condition at the time of the survey ($P < 0.001$), or have had it ever ($P < 0.001$). Scoliosis was also significantly associated with previous vulvodynia ($P = 0.008$), present vulvodynia ($P = 0.003$), and ever having had the condition ($P < 0.001$) (Table 2). Hysterectomy was associated with present vulvodynia ($P = 0.012$) and ever having had the condition ($P = 0.007$) (Table 2). Vulvar surgery was associated with only present vulvodynia ($P = 0.025$) (Table 2).

The mean height, weight, and body mass index (calculated as weight in kilograms divided by the square of height in meters) were similar among women with and without a history of vulvodynia (Table 3).

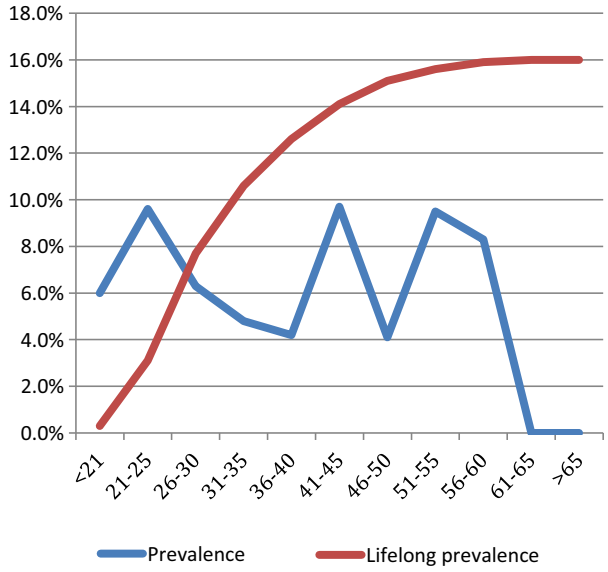

Fig. 1. Prevalence of vulvodynia at the time of the survey and lifelong prevalence of the condition.

Table 1
Presence or absence of vulvar pain (n = 1229).

Vulvar pain	No. (%)
Never had pain	1032 (84.0)
No pain presently, but has had for >6 months in the past	117 (9.5)
With pain for >6 months	80 (6.5)

4. Discussion

The prevalence of vulvodynia at the time of the present study was 6.5%, which is similar to what has been described in other reports [2,7,8]. The only other survey conducted in Portugal found a prevalence of 5.5%, but only women aged 17–28 years were included [9]. Past vulvodynia was reported by 9.5% of participants in the present study. Other series found prevalences ranging from 6.1–20.8% [2,6,7]. This variation can be attributed, at least partly, to the use of different cutoffs, with a minimum of 3 or 6 months of symptoms used to define a case.

In the present study, the mean ages of patients with and without a history of vulvodynia did not differ, although there seemed to be a peak at 21–25 years, followed by another two at 41–45 years and 51–55 years. This distribution could represent localized and generalized vulvodynia, with the younger women more likely to have the former presentation. The mean age of women with present vulvodynia in this cohort was 33.0 years, which does not show the real distribution of the disease, because of the peaks of prevalence. In other series [4,10], mean ages ranged from 27.4 to 50.4 years.

Little has been written about pregnancy, delivery, birth trauma, and subsequent vulvodynia. In a study of pelvic chronic pain 1 year after delivery [11], the prevalence of vulvodynia was only 2.6%. The present study showed that having had vaginal deliveries or episiotomy/laceration is unlikely to play a role in the development of vulvodynia.

Women who had ever taken oral contraceptives were significantly more likely to have ever had vulvodynia. However, women taking oral contraceptives at the time of the survey did not seem to be at increased