

Characteristics of women with chronic pelvic pain referred to physiotherapy treatment after multidisciplinary assessment: a cross-sectional study.

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Abstract

Background and aims: Chronic pelvic pain (CPP) in women is a complex condition that can seriously impact health and quality of life. Clinical guidelines for CPP place great demands on healthcare professionals, as they require both specialized knowledge about the pelvic area and knowledge of the mechanisms of chronic pain. To ensure best possible assessment and treatment of these women it is important to bring about more knowledge of the special CPP features. The purpose of this paper is to describe the characteristics of women with CPP evaluated at the University Hospital of North Norway, and further referred to physiotherapy. The frequency of having a history of abuse or previous pelvic surgery will also be reported, and analyses performed to investigate if subjective health status differs between women with and without these experiences.

Methods: We collected cross-sectional data from 62 women with CPP aged 20-65 (mean age 38.0), referred to physiotherapy after assessment by medical specialists. Data were collected by semi-structured interviews for demographic variables and medical history, and self-administered questionnaires on pain intensity, sexual function, urinary incontinence (UI), anal incontinence (AI), obstructed defecation syndrome (ODS), subjective health complaints (SHC) and symptoms of anxiety and depression.

Results: Pain duration of more than 10 years was reported by 42%, mean pain score was 4.7/10, and analgesics were used weekly by 48%. Previous pelvic or abdominal surgery was reported by 71%, and sick leave >12 weeks the last year by 34%. Reduced sexual desire was reported by 78%, dyspareunia by 73%, UI by 54%, AI by 23%, and ODS by 34%. More than 90% reported musculoskeletal or pseudoneurologic complaints. Anxiety and depression scores defined as requiring treatment were reported by 40%. Abuse was reported by 50%, and associated with significantly more reports of ODS ($p=0.02$), more SHC ($p=0.02$) and higher anxiety scores ($p=0.009$). Analgesic use and sick leave were significantly higher both among women with a history of abuse ($p=0.04$ and $p=0.005$) and among those with previous surgery ($p=0.04$ and $p=0.02$). Women with previous surgery reported significantly lower pain intensity during intercourse than those without previous surgery ($p=0.008$).

Conclusions: Women with CPP have complex symptoms and high scores for both physical and psychological complaints. Women exposed to abuse have especially high scores related

to analgesic use, sick leave, ODS, anxiety and SHC. Women with previous surgery report more analgesic use and sick leave, and lower pain intensity during intercourse, than those without previous surgery.

Implications: This study illustrates the complexity of CPP and highlights the need for health professionals to have specialized knowledge of the possible features of the condition. Previous abuse seems to be more associated with poor scores on several health outcomes than surgery, but this needs to be investigated further.

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Keywords

Pelvic Pain, Chronic Pain, Women's Health, Subjective Health Outcomes

Abbreviations: CPP, chronic pelvic pain; NRS, numeric rating scale; SHC, Subjective Health Complaints; HSCL-25, Hopkins Symptom Check List-25; SD, standard deviation; IQR, inter quartile range; UI, urinary incontinence; AI, anal incontinence; ODS, obstructed defecation syndrome.

Key Message

The article highlights the complexity of CPP, provides complementary data on subjective health complaints and sexual health, and reports a high occurrence of abuse in this population.

Introduction

Chronic pelvic pain (CPP) is a common and debilitating condition, and population-based studies suggest a prevalence of 11-25% in Western European women.^{1,2} The European Association of Urology has defined CPP as “chronic or persistent pain perceived in structures related to the pelvis that has been continuous or recurrent for at least 6 months.” They additionally describe CPP as “often associated with negative cognitive, behavioral, sexual, and emotional consequences, as well as with symptoms suggestive of lower urinary tract, sexual, bowel, pelvic floor, or gynecological dysfunction”.³

This rather broad definition reflects the complexity of CPP. Relative to the general female population both physical and psychological health scores are poorer in this group.^{2,4} Repeated surgical procedures in the pelvic area, co-existing conditions, and traumatic experiences such as physical, sexual, or psychological abuse are suggested as possible risk factors for CPP.⁴ Multiple referrals, investigations and treatments in different medical specialties are common,² but in many cases no physical cause of the pain is identified or new interventions not possible, leaving a significant number of women with long-term pain.^{2,5} Concerning the correct extent of the condition it is also important to mention that it is recognized that many women with CPP do not seek help or are not referred to secondary care.

Clinical guidelines for CPP recommend that early assessment should involve investigations aimed at specific disease-associated pelvic pain and assessment of functional, emotional, behavioral, sexual and other quality of life issues. They further recommend a multi-specialty and multi-disciplinary management with consideration of all symptoms.^{3,6} These recommendations place great demands on healthcare professionals, requiring both specialized knowledge about the pelvic area and peripheral pain mechanisms, and knowledge of prolonged pain and central pain mechanisms.

Women with CPP might be referred to a pain center with assessment and treatment within the scope of a biopsychological perspective, however without focus on specific challenges in the pelvic region. On the other hand they can also be referred to different specialists such as

gynecologists, urologists or colorectal surgeons that not necessarily have specialized skills in chronic pain management. After medical assessment many of these women are referred to a physiotherapist, a profession also with varying knowledge of CPP. Thus, it is important to bring about more knowledge of the special CPP features to enable early recognition of the condition and to ensure precise assessment and treatment.

The purpose of this paper is to describe the characteristics of women with CPP evaluated at the University Hospital of North Norway, and further referred to physiotherapy. We also want to investigate if suggested risk factors such as history of abuse and previous surgical operations in the pelvic area are frequently reported, and if women with and without these experiences report different subjective health status.

Material and methods

This study was based on cross-sectional data of 62 women who participated in a randomized controlled trial comparing two different physiotherapy treatments. The trial was conducted at the Norwegian National Advisory Unit on Incontinence and Pelvic Floor Health, University Hospital of North Norway. All data was collected at the time of inclusion at the hospital's Physiotherapy Outpatient Clinic by two trained physiotherapists, between March 2015 and November 2016. The data presented in this paper was collected before randomization and start of treatment.

Participants were women referred to physiotherapy treatment following CPP diagnosis by a gynecologist, urologist, and/or colorectal surgeon. Women with pain defined as gynecologic, urologic, or gastroenterological and/or pain in the pelvic floor muscles for a minimum of 6 months, aged 20-65 years, motivated to participate in the randomized trial, and able to speak and understand a Scandinavian language were included. If malignancy or conditions requiring special medical attention were discovered the women were referred to relevant follow-up, and not considered for study participation.

The exclusion criteria were pregnancy, childbirth during the last year, drug addiction, serious psychiatric diagnosis, and previous treatment by the physiotherapists at the intervention program. Women with intraabdominal or pelvic surgery within the previous six months or

Botulinum toxin injections in the pelvic area in the last four months were also not eligible.

Demographic data and data on health-related history were obtained during a semi-structured interview. This included information about duration of CPP, use of analgesics, previous treatment, other diagnosis, sick leave and previous abuse exposure (physical, psychological, or sexual). Questions on abuse exposure were asked at the end of the semi-structured interview, with the same phrasing for all women. For detailed information about the content of the interview see Appendix 1.

Pelvic pain intensity was assessed using a Numerical Rating Scale (NRS), an eleven point box scale in which zero represents no pain and 10 represents pain as bad as it could be.⁷ The women were asked to rate their mean pain intensity during the last seven days, and to state if pain in the last week was worse, better, or unchanged compared to the previous month. The NRS has shown good sensitivity and validity.^{7, 8}

For information about sexual function a modified self-reported questionnaire originally developed by Træen et al. was used.⁹ The questionnaire comprised four questions. First the women were asked whether they were sexually active, with answers reported as “yes” or “no”. If they answered affirmatively they were asked if they had experienced lack of sexual desire or dyspareunia over the past 12 months. Answers were reported as “Yes” (“all the time,” “almost all the time,” and “quite often”) or “No” (“quite rarely” or “never”). In the last point the women were asked to register the intensity of dyspareunia on a NRS.

The Subjective Health Complaints (SHC) questionnaire was used to register common somatic and psychological health complaints during the last 30 days.¹⁰ The 29-item list consists of complaints in the categories musculoskeletal pain, pseudoneurology, gastrointestinal problems, allergy, and flu. The respondents provided a score for each of the complaints on a Likert scale ranging from 0-3. We calculated the proportion of women who reported complaints within each category and the number of single items, classified as absent (score 0) or present (score 1–3), and we also calculated the proportion of “severe complaints” (score 3).¹⁰ The SHC questionnaire is known to be a reliable measure of SHC.¹⁰

Common symptoms of anxiety and depression were measured using Hopkins Symptom Checklist (HSCL-25).¹¹ The respondents indicated the extent to which they had experienced

any of 25 different symptoms of anxiety and depression over the last 14 days using a four-point Likert scale ranging from 1-4. Separate mean scores for anxiety and depression items were calculated. A cut off point of 1.75 was used to distinguish women with and without psychiatric symptoms, and the dichotomized data are presented in the results section.¹¹ The HSCL-25 is known to be a reliable measure among Norwegian women, and its validity has been shown in a Swedish population.^{11, 12}

Urinary incontinence (UI) was defined as “the complaint of involuntary leakage of urine” and documented by the self-administered questionnaire ICIQ-UI SF.¹³ Scores range from 0 to 21, and in this study we used the dichotomized values to indicate no UI (score=0) or UI (score ≥ 1)¹⁴. The questionnaire is validated¹³ and the Norwegian version is found adequate for use after linguistic validation.^{15, 16}

Information about anal incontinence (AI), defined as involuntary passage of fecal material and/or flatus¹⁷, was collected using the validated St Marks interview score.¹⁸ The score gives information about type and frequency of AI (gas, liquid, solid) and its impact on daily life, the need to wear a pad or plug, the use of constipating medication, and the lack of ability to defer defecation for 15 minutes.¹⁸ Scores range from 0 to 24, and we used the dichotomized scores so that 0-3 = “no AI” and 4-24 = “AI”.^{19, 20}

To record information about obstructed defecation symptoms (ODS) a five-item score developed and validated by Renzi et al²¹ was used. Each item is graded from 0 to 5 with a maximum total score of 25, and the optimal cutoff point to discriminate between healthy participants and patients with ODS is found to be ≥ 9 .²¹ We used the dichotomized values so that ≤ 8 =no ODS and ≥ 9 =ODS.

Statistical analyses

Descriptive statistics for continuous variables are presented with mean and standard deviation (SD) or median and interquartile range (IQR) as appropriate, and categorical variables are presented as percentages and frequencies (n).

To investigate differences in current subjective health status between women with and without a history of abuse and with and without pelvic surgery, the variables “sick leave ≥ 12

weeks last year,” “use of analgesics weekly in the last month,” “pelvic pain intensity,” “dyspareunia,” “UI,” “AI,” “ODS,” “number of any SHC,” “number of severe SHC,” and “HSCL-25 score above 1.75” (included subscales for anxiety and depression) were tested separately with bivariate tests. Independent samples T-tests or Mann Whiney U-tests were used for continuous variables as appropriate, and the Pearson Chi-square test for independence were used for categorical variables.

We used the total score for non-missing items when calculating means for outcome measures with missing values. Outcome measures with more than 10% of missing items were not included in analyses. All tests were two-tailed and a p-value<0.05 was considered statistically significant. Statistical analyses were conducted using SPSS version 25²².

Results

A total of 108 women were referred for study participation. 57% (n=62) of the referred women were included and gave consent, 29% (n=31) declined to participate, and 14% (n=15) did not meet the inclusion criteria. Excluded participants were offered a referral to regular physiotherapy treatment.

Characteristics of the included women are summarized in Table 1. Current pain intensity was reported to be approximately the same as that experienced over the last four weeks by 79% (n=49), and 76% (n=47) reported constant pain during the last week. There was no significant group difference in pain intensity among women reporting and not reporting analgesics use weekly the last month (mean pain 4.2/10 versus 4.8/10, p >0.05). The total number of surgeries among the 44 women (71%) who reported previous abdominal or pelvic surgery was 116 (range 1-10) (Table 1).

Fifty percent (n=31) of the women reported events perceived as abuse of a physical, psychological or sexual nature. Of these, 42% (n=13) had been exposed to abuse as a child (≤16 years of age), 39% (n=12) as an adult, and 19% (n=6) had been exposed to abuse both as a child and as an adult. We do not have complete information about type of abuse, as giving this information was optional.

Of the 62 women 79% (n=49) reported being sexually active. Reasons for not being sexually active were dyspareunia (15%, n=9) and no partner (6%, n=4). Lack of or reduced sexual desire was reported by 78% (n=38) of the sexually active women, and dyspareunia was reported by 73% (n=36). The median pain intensity during intercourse among the sexually active women was 5.5/10 (IQR=4.5) on the NRS.

Ninety-eight percent (n=61) of the women reported at least one musculoskeletal complaint on the SHC questionnaire. Pseudoneurological complaints, including sleep problems, tiredness, anxiety, depression, and sadness, were reported by 92% (n=57). Information on the most reported complaints is presented in Figure 1, including both the proportion reporting any complaints and proportion reporting severe complaints. The most commonly reported complaints in the "other complaints" category were leg pain, gas discomfort, shoulder pain, upper back pain and sadness/depression.

Forty-five percent (n=24) of the women scored above the cut off point for psychiatric symptoms on the HSCL-25, with a total mean score of 1.83 (SD=0.5, n=53) (data from 9 women missing, five did not receive the questionnaire at baseline and four did not fill in sufficient number of items to be included in the analyses). 46% (n=25) scored above the cut off point for symptoms of depression, with a mean score of 1.88 (SD=0.5, n=53), and 36% (n=19) scored above the cut off point for anxiety, with a mean score of 1.76 (SD=0.5, n=53).

Table 2 shows the results of bivariate tests for differences in subjective health status among women exposed and not exposed to abuse. The same variables were tested for women with previous pelvic or intra-abdominal surgery, and the results are presented in Table 3.

Discussion

Our results show high rates of sick leave, sexual complaints, musculoskeletal SHC, UI, AI, constipation and abuse exposure compared to previous reports of women with CPP.^{23, 24} CPP characteristics including long duration of pain, previous pelvic or abdominal surgery, psychiatric symptoms, and a large number of co-existing conditions or complaints were also confirmed in this study.^{2, 4} Women exposed to abuse reported higher use of analgesics, more sick leave, more SHC, higher anxiety scores and ODS than women not exposed to abuse. Women reporting previous surgery used more analgesics, and they reported more sick leave and less dyspareunia than those not reporting surgery.

The relatively small sample size of this study is a limitation. However, the low number of participants allowed us to perform thorough interviews with all of the women, which we believe provided more in-depth information. The included women represent a selected group, and the results cannot be generalized to others than women with CPP who fulfill the same inclusion criteria as used in this study. Among the women that were referred after assessment by a specialist doctor, 31 refused to participate. Although not reported systematically, we are aware that economic reasons, long travel distance, the necessity to stay away from home for 10 days, too much bothers and possibility of being randomized to a group treatment were reasons given by some of the women. This may have influenced the group characteristics. The cross-sectional design itself implies that data cannot be used to infer any temporal associations between exposure and outcome, and there may be recall bias.²⁵ All questionnaires used in this study were validated except the one related to sexual function, because we were unable to find an appropriate and not too time consuming sexual function questionnaire that was validated in Norway.

The mean pelvic pain intensity of 4.7/10 is classified as "moderate to severe"²⁴ and most of the women reported constant pain, yet only half had used analgesics weekly in the last month. This is in agreement with the use of analgesics reported in a Danish study on women with CPP,²⁴ but lower than the 60% reported among women with chronic pain in a large Norwegian population.²⁶ There may be several reasons why the women in our study report less analgesic use than the general chronic pain patient population, including the observation that CPP patients appear to report lower mean pain intensity.^{27, 28} Different methods of measuring analgesic usage may also give different results.

Twenty percent of the women in our study reported that they were currently on sick leave, and one third of the working women reported a minimum of 12 weeks sick leave in the last year. The same result was documented in a CPP-study from New Zealand,²⁹ and 35% of women in a previous Norwegian randomized controlled trial on women with CPP were on sick leave at the time of data collection.²³ This is considerably higher than found in general among Norwegian women,³⁰ and suggests that CPP may be a significant factor in work absence.

Half of the women in our study reported that they had been exposed to abuse. A survey of

more than 700 women diagnosed with CPP reported that 46% had been exposed to abuse, indicating the magnitude of this problem among women with CPP.³¹ Information about the total number of Norwegian women with CPP reporting physical, psychological or sexual abuse does not exist, but the numbers of sexual abuse alone has been reported to be 15-20%.²³ The overall abuse rate including violence, threats of violence, or sexual assault in the general female population in Norway has been estimated to be 36%.³² Although it appears that the numbers reported among women in our study are higher than compared to the general female population, we can not directly compare these numbers as different phrasing, definitions and data collection methods and periods have been used.

Sexual function is affected by pain during intercourse and reduced sexual desire,³ and the majority of the women in our study were sexually active despite these symptoms. Previous studies on women with dyspareunia have shown that reasons for this can be a prioritization of the partner's enjoyment before their own or expectations from the partner or the community,³³ but this was not explored in our study. Desrochers et al. suggested that the psychosocial burden of genital pain is heavier due to feelings of shame, inadequacy, and low self-esteem.³⁴ Our results emphasize that sexual function, dyspareunia and desire are important to address during assessment and treatment.

We found higher prevalence of UI, AI and ODS among the women in our study than are reported in studies of the general population.^{35, 36, 37} These findings reflect some of the special characteristics of women with CPP, and illustrates how they differ from other chronic pain patients and need more specialized competence.

To our knowledge, there are no comparable data on the occurrence of SHC in women with CPP. We found considerably higher scores on all parameters of the SHC questionnaire in our sample than in the general female population in Norway. The highest reports were on low back and neck pain the last month, which was reported by about 80% of our sample compared to 45% in the general population.³⁸ In our study 78% of the women reported headache, compared to 58% in the general female population.³⁸ This confirms that women with CPP have health concerns beyond the pelvic and abdominal area.

Abuse is identified as a potential risk factor for CPP,⁴ but only a few previous studies have

provided information on the occurrence of abuse and associations with health status in women with CPP.^{31, 39, 40} Women with a history of bullying or abuse have been shown to have poorer scores on both somatic and psychological health measures,³⁹ and several reports indicate that exposure to abuse of any kind can lead to a higher risk of poor health later in life.^{31, 40-42} This is in agreement with our findings showing more symptoms of anxiety or depression and more SHCs among women exposed to abuse. We also found that those exposed to abuse had significantly more sick leave and used more analgesics, suggesting that abuse exposure may have significant impacts on both on the complexity and the severity of the CPP condition. Significantly higher numbers were shown for ODS among women who reported exposure to abuse, and although not statistically significant these women also had more complaints of UI and AI than women not exposed to abuse. We did not find a statistically significant association between abuse and pain intensity, which is in line with the findings in As-Sanie et al⁴⁰ although reported by others.⁴ Women exposed to abuse did report higher mean pain intensity the last 7 days though.

We found that women with previous surgery had been more on sick leave and used significantly more analgesics than those without. Notably, they also reported lower pain intensity during intercourse than women without previous surgery. We have no explanation of this finding. In some cases, surgery may have alleviated pain originating from local pathologies and thereby also led to less dyspareunia. The women with previous surgery also had higher scores of UI, AI and ODS than those without surgery, although not statistically significant. In contrast to other reports, we did not find associations between having had a surgery and scores of anxiety, depression, or SHC.^{2, 4} The lack of a control group without CPP may explain the absence of significant associations, and our study sample was too small to run subgroup analysis of those who had received different types of surgeries. Further studies investigating possible associations between number and types of surgeries and the different health outcomes are warranted.

Conclusions and implications

Our study contributes to the understanding of the complexity seen in this group of women, and thus supports the recommendation for taking a broad biopsychosocial and multidisciplinary approach.⁴³ However, this kind of approach may be more resource demanding and not always possible to implement, and single discipline treatment with

multimodal approach may then be a good alternative.⁵ Long duration of pain and high levels of psychiatric symptoms such as anxiety and depression are known to be poor prognostic indicators for treatment success. It is essential for clinicians to take this into account in the assessment and treatment of CPP.^{3, 6, 44} Specific issues related to the pelvic area, as sexual function/dysfunction, incontinence and constipation should also be paid attention. In addition, the high prevalence of abuse exposure is of great importance.

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Legends of Tables and Figures

Table 1. Characteristics of women with chronic pelvic pain, n = 62.

Table 2. Subjective health status of women reporting abuse exposure versus not reporting abuse exposure, n=62

Table 3. Subjective health status of women with previous pelvic or intraabdominal surgery versus women not reporting surgery, n=62

Figure 1. The most reported subjective health complaints among women with chronic pelvic pain, n=62.