



Abstracts from the International Pelvic Pain Society (IPPS) Annual Scientific Meeting on Pelvic Pain 2020

Georgine Lamvu, MD, MPH

Despite challenges of 2020, the 23rd International Pelvic Pain Society (IPPS) was successfully conducted in a virtual format. The 2020 annual meeting program was adapted to overcome the challenges of the COVID pandemic while still promoting interdisciplinary education and collaboration. In the end, more than 200 clinicians, researchers, and educators from all over the world converged virtually to share new research and clinical best practices for the management of persistent pelvic pain disorders.

The 2020 meeting showcased several notable presentations. Investigators from Northwestern University described a novel way of characterizing dysmenorrhea using transvaginal ultrasound, while researchers from Turkey presented some of the first reports on the prevalence of dysmenorrhea and premenstrual syndrome for that country. As expected, the use of telehealth to manage pelvic pain during the COVID pandemic was the focus of several posters. Other unique topics included the Cannabis use for management of chronic pelvic pain and a report on the prevalence of pelvic muscle dysfunction in women who are undergoing surgery for Endometriosis. The variety of the presentations reflects the multi-factorial nature of chronic pelvic pain in women and several investigators described interdisciplinary models for managing this type of pain.

The virtual format allowed researchers to present their abstracts in poster and in oral form. It turned out that this format allowed for more robust discussion than traditional walk-by poster sessions. Prior to presentation, abstracts underwent a rigorous peer review process whereby each abstract was evaluated by at least 2 members of the Scientific Program, Abstract or Research IPPS committees. Abstracts were rejected if they were incomplete, if they had inadequate statistical analysis, or if the topic was not relevant to pain. Case reports were accepted for presentation but are excluded from this publication. In all 29 were accepted for poster or oral presentation, and all were deemed suitable for publication in these proceedings.

The IPPS appreciates the efforts of all healthcare professionals and researchers who dedicate their lives and careers to the mission of improving the lives of people living with chronic pain. We thank the people who live with the experience of pain and yet participate in research and contribute to our improved understanding of chronic pain. This relentless effort and collaboration will continue throughout the year and we hope to come together again in 2021 at the 24th Annual Scientific meeting in Baltimore, Maryland.

Georgine Lamvu, MD, MPH

Chair of the International Pelvic Pain Society

Professor of Obstetrics and Gynecology

University of Central Florida

*Director of the Fellowship in Minimally Invasive Gynecologic Surgery
Orlando VA Medical Center*

Treatment patterns in Women Seeking care for endometriosis at an endometriosis center

Katharine E. Linder^a, Adela G. Cope, MD^b, Chia-Sui Weng, MD^c, Zaraq Khan, MBBS^b, Kristin C. Mara^b, Tatnai L. Burnett, MD^b
^aMayo Clinic Alix School of Medicine, ^bMayo Clinic, ^cMacKay Memorial Hospital

Contact details: Katharine Linder, linder.katharine@mayo.edu

Introduction: This study aimed to assess treatments attempted prior to presenting to an endometriosis center for evaluation of pelvic pain potentially related to endometriosis.

Methods: In this retrospective cohort study we identified 140 women with pathology-proven endometriosis who completed a preoperative standardized pain form and underwent surgery at an endometriosis center. Women were stratified into 3 groups for analysis: no prior surgery, 1 prior surgery, and 2+ prior surgeries.

Results: The most common treatments used prior to seeking tertiary care were contraceptive pills/patches/rings (51.6%) and surgery (46.1%). Most women (52.1%) were diagnosed with pelvic floor dysfunction at time of presentation or prior to consultation. There was a significant relationship between increasing number of surgeries (none vs 1 vs 2+) and gonadotropin-releasing hormone (GnRH) agonist use (19.0% vs 27.5% vs 56.0%, $P = 0.003$) as well as receiving care from a gynecologist (52.4% vs 70.0% vs 80.0%, $P = 0.03$). Though not significant, a trend was noted between increasing surgeries and narcotic use (20.6% vs 30.0% vs 40.0%, $P = 0.17$). There was a

Copyright © 2021 The Author(s). Published by Wolters Kluwer Health, Inc. on behalf of The International Association for the Study of Pain. This is an open access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

PR9 6 (2021) e940

<http://dx.doi.org/10.1097/PR9.0000000000000940>

statistically significant relationship between multiple surgeries and illicit drug use (0% vs 0% vs 15%, $P < 0.001$). There was no relationship between number of surgeries and severity of dysmenorrhea, mid-cycle pain, dyspareunia, or overall pain level.

Conclusions: Patients with pelvic pain and endometriosis who have undergone multiple surgeries are more likely to have used GnRH agonists and report illicit drug use prior to presenting to specialized care. Pelvic floor dysfunction remains an important cause of pain in this population.

Source of Financial Support: None.

Disclosures/Conflicts of Interest: No conflicts of interest to disclose.

Non-pharmacologic coping mechanisms for endometriosis associated pain: fact or fiction?

Maryama Ismail^a, Adela G. Cope, MD^b, Chia-Sui Weng, MD^c, Kristin C. Mara^b, Tatnai L. Burnett, MD^b, Zaraq Khan, MBBS^b

^aMayo Clinic Alix School of Medicine, ^bMayo Clinic, ^cMacKay Memorial Hospital

Contact details: Maryama Ismail, ismail.maryama@mayo.edu

Introduction: The aim of this study was to investigate whether women utilizing more positive non-pharmacologic coping (NPC) resources would experience greater improvements in pain scores after excision of pathology-proven endometriosis, compared to those utilizing fewer resources.

Methods: Patients were surveyed using the Modified International Pelvic Pain Society Pelvic Pain Assessment (MIPPS). We devised a scoring system where each NPC option on the MIPPS was classified as positive (one point), negative (negative point), or neutral (no points). Women were divided into 2 groups based on high (6+) vs low (5 or less) NPC utilization. Baseline demographics, intraoperative findings, and responses to multiple pain domain questions were compared.

Results: Of the 140 women, 81 had high utilization (57.9%) and 59 (42.1%) had low utilization. Baseline demographics between groups were comparable. The high-utilization group displayed less improvement of pain with menses after surgery compared to the low-utilization group (-4.1 vs -6.1 , $P = 0.049$). Postoperatively, women in the high-utilization group experienced more pain with sex (2.2 vs 0.6, $P = 0.036$), pain after their period was over (1.5 vs 0.4, $P = 0.038$), and pelvic pain lasting hours or days after sex (1.1 vs 0.3, $P = 0.049$) compared to the low-utilization group.

Conclusions: In our study, women utilizing more NPC mechanisms did not have more pain relief after endometriosis surgery compared to low NPC utilizers after adjusting for clinical confounders. These data suggest that women with high NPC utilization may experience endometriosis pain differently from those with low utilization.

Source of Financial Support: None.

Disclosures/Conflicts of Interest: None.

A novel method for characterizing spontaneous menstrual cramps with uterine artery doppler velocimetry

Richard Cockrum, MD, Frank Tu, MD, MPH, Ellen Garrison, BSN, RN, Katlyn Dillane, Genevieve Roth, Kevin Hellman, PhD

NorthShore University HealthSystem

Contact details: Richard Cockrum, rcockrum@gmail.com

Introduction: This prospective observational study examined women with dysmenorrhea and pain-free controls, recruited from the community setting. Primary outcome was uterine artery

Doppler velocimetry obtained off menses, and on menses before and after naproxen sodium. Prostaglandin-mediated transient uterine ischemia is hypothesized to be a primary mechanism of cramping pain. Ultrasonography was used to assess for vascular changes during self-reported cramping.

Methods: Women with dysmenorrhea reported cramping pain events in real-time using a hand-held squeeze-bulb. Pain-free controls performed random squeezes every 2 to 5 minutes. Uterine artery Doppler velocity was measured near the cervico-corporeal junction by transabdominal ultrasonography before, during, and after a bulb-squeeze. The median [IQR] values were calculated for all conditions (naproxen sodium, cycle day, and spontaneous cramping) with significance assessed with a linear mixed model ($\alpha = 0.05$).

Results: Thirty-one of 35 participants ($n = 23$ for dysmenorrhea participants, $n = 8$ for pain-free controls) had adequate measurements for analysis. For the primary objective, no vascular changes were detected during a self-reported cramp for women with dysmenorrhea ($P > 0.79$). There were also no significant differences between groups off menses ($P > 0.4$) or on menses before naproxen sodium ($P > 0.2$). However, naproxen sodium decreased resistance for women with dysmenorrhea but paradoxically increased resistance for pain-free controls.

Conclusions: Although we observed an intriguing effect of naproxen on perfusion, we did not find evidence of transient increases in uterine artery resistance during self-reported cramps suggestive of ischemic pain.

Source of Financial Support: NIH HD081709 and HD098193.

Disclosures/Conflicts of Interest: Author FT is a consultant for AbbVie, Inc. There are no other disclosures to report for other authors.

Female sexual dysfunction: prevalence among women in Puerto Rico

Gabriella Rivera Ortiz, MD, Mónica del Moral Suazo, BS, Keimari Méndez, MD

University of Puerto Rico

Contact details: Gabriella Rivera Ortiz, gabriella.rivera1@upr.edu

Introduction: The aim of this study was to validate the Female Sexual Index Function Questionnaire (FSFI) in a Spanish version for women living in Puerto Rico (PR) and estimate the prevalence of female sexual dysfunction (FSD) among these women. The prevalence of FSD in the United States (US) approximates 40% of women and sparse information is available among the Hispanic community. FSD can often cause poor quality of life, relationship strains, and depression.

Methods: In phase one, validation of the translated FSFI questionnaire was done. Phase 2 consisted in determining prevalence. Inclusion criteria: women 21 year old, who had been sexually active in the past 6 months, were PR residents, and could read/write in Spanish. Questionnaires were scored based on the FSFI Domain Scores and Full-Scale Scores. A Full-Scale score of ≤ 26.55 was classified as FSD. Statistical analysis was performed using Minitab 17 Statistical Software.

Results: One hundred fourteen questionnaires were completed. 43.85% of participants were classified with FSD. Within the FSD cohort, 70% of women were 50 year old or younger and 72% had at least one comorbidity (30% respiratory and 16% psychological). There were no significant differences between civil status. Although exact prevalence cannot be determined at the moment, it can be estimated that the prevalence of FSD

among women living in PR would range among 48.90% to 58.84%.

Conclusions: Even with the limited sample size, the estimated range of FSD prevalence among the women living in PR suggests a higher prevalence than that estimated for the US (40%). These results elucidate the predominance of FSD in PR.

Source of Financial Support: None.

Disclosures/Conflicts of Interest: None.

Nonrelaxing pelvic floor dysfunction and presenting symptoms in women undergoing surgery for endometriosis

Adela G. Cope, MD^a, Chia-Sui Weng, MD^b, Isabel C. Green, MD^a, Kristin C. Mara^a, Zaraq Khan, MBBS^a, Tatnai L. Burnett, MD^a
^aMayo Clinic, ^bMackay Memorial Hospital

Contact details: Adela Cope, cope.adela@mayo.edu

Introduction: The aim of this study was to assess differences between women with and without non-relaxing pelvic floor dysfunction (PFD) presenting to an endometriosis center for surgical treatment.

Methods: In this retrospective cohort study, we identified women with pathology-positive endometriosis following laparoscopy between 09/2015 and 11/2018. Outcomes of interest included pain scores at time of presentation and prior treatments before consultation. We compared presenting symptoms of women with and without PFD in the setting of pathology-proven endometriosis to assess differences that may help increase recognition of PFD in this population. Women were dichotomized by presence or absence of PFD for analysis. Patients were included if they completed the Modified International Pelvic Pain Society (MIPPS) Pelvic Pain Assessment prior to surgery. Responses to the MIPPS Pelvic Pain Assessment were reviewed and compared between groups.

Results: We identified 138 women meeting inclusion criteria: 71 with a diagnosis of PFD and 67 without a diagnosis of PFD. Women with PFD had significantly higher pain scores overall (6.6 ± 1.9 vs 4.7 ± 2.7 , $P < 0.001$) and in all other pain domains. While those with PFD were more likely to have undergone physical therapy (38.0% vs 11.9%, $P < 0.001$) or used massage (40.8% vs 23.9%, $P = 0.034$) prior to consultation, less than half had undergone these therapies for treatment of their pain.

Conclusions: These data suggest that PFD may be underdiagnosed and undertreated in this patient population, which could contribute to a higher pain burden experienced by these women. Larger studies are needed to assess if targeted therapy for PFD in addition to surgical treatment for endometriosis improves patient outcomes.

Source of Financial Support: None

Disclosures/Conflicts of Interest: None

Investigation of smoking habits, alcohol consumption and caffeine intake among university students with and without premenstrual syndrome

Alime Buyuk, MPT^a, Asli Yeral, PT, MSc^b, Ozge Unlu, PT Student^c, Basak Ezgi Un, PT Student^c, Rukset Attar, Prof^d, Erkut Attar, Prof^d, Ayca Aklar Corekci, MPT^b

^aPhysiotherapy and Rehabilitation Department, Faculty of Health Sciences, Akdeniz University, ^bPhysiotherapy and Rehabilitation Department, Health Sciences Faculty, Yeditepe University, ^cHealth Sciences Faculty, Yeditepe University, ^dDepartment of Obstetrics and Gynecology, School of Medicine, Yeditepe University, Istanbul, Turkey

Contact details: Alime Buyuk, alimebuyuk@gmail.com

Introduction: Premenstrual syndrome (PMS) is the most common problem among females from all age groups due to several factors. Given various factors contributing to the PMS among women, the current study aimed to compare smoking, alcohol, and caffeine intake of university students with and without PMS.

Methods: This study included 200 students aged between 18 and 30 years who divided into 2 groups by premenstrual syndrome scale (PMSS): Students with PMS group (109F) and students without PMS (91F). Each student filled out a structured questionnaire including socio-demographic features and general health information. Alcohol consumption, caffeine intake and smoking habits of both groups were assessed.

Results: This study showed that caffeine intake was significantly different between the groups ($P < 0.05$). In contrast to caffeine intake, there was no statistically significant difference between groups with and without PMS in terms of smoking, alcohol consumption ($P > 0.05$). The number of students who have smoking habits among students with PMS was more than students without PMS.

Conclusions: The current study indicated that students with PMS had much more caffeine consumption than students without PMS. According to our results, caffeine intake, smoking habits, and alcohol consumption may be considered as common habits for females with PMS. As a conclusion, recommendations about reducing caffeine intake in females can be given to prevent PMS at an early age.

Source of Financial Support: There is no source of Financial Support.

Disclosures/Conflicts of Interest: There is no conflict of interest to declare.

Telehealth physical therapy in chronic pelvic pain

Alime Buyuk, MPT^a, Gerard Greene^b, Heather Jeffcoat, DPT^c, Sarah Marsh^d, Heba Shaheed^e

^aPhysiotherapy and Rehabilitation Department, Faculty of Health Sciences, Akdeniz University, ^bHarborne Physiotherapy, ^cFemina Physical Therapy, ^dMummy MOT, ^eThe Pelvic Expert

Contact details: Alime Buyuk, alimebuyuk@gmail.com

Introduction: The objective of the study was to show the efficacy of Telerehabilitation-Based Physical Therapy (TBPT) on pain intensity and treatment satisfaction in patients with chronic pelvic pain. Telerehabilitation is described as the remote conveyance of healthcare services and clinical information using information and telecommunication technologies involving the internet by eliminating the barriers of distance, time, and travel to receive care. Most of the studies have employed telerehabilitation methods with patients who have pain, mainly for assessment or exercise program. There is not any study on the telerehabilitation application of physical therapy in patients with chronic pelvic pain during coronavirus pandemic.

Methods: This study is a prospective study of patients with chronic pelvic pain. Eighteen participants (5 men with pudendal neuralgia and 13 women with vulvodynia) age between 28 and 42 years with chronic pelvic pain were treated for 12 sessions in 6 weeks with the TBPT technique by the same pelvic health physiotherapist. Pain symptoms and patient satisfaction were assessed with the Visual Analog Scale (VAS).

Results: Patients reported improvement pain and satisfaction of VAS scores. Pain VAS scores significantly decreased from 7.3 ± 1.15 points to 2.30 ± 0.82 points ($P < 0.005$) after TBPT.

Scores of patients satisfaction (VAS) significantly increased after TBPT ($P < 0.05$).

Conclusions: This study showed that TBPT represents an effective therapeutic approach for the management of chronic pelvic pain during the pandemic and providing pelvic floor muscle health.

Source of Financial Support: None.

Disclosures/Conflicts of Interest: None.

Prevalence of dysmenorrhea among female university students in Turkey

Ayça AklarÇörekçi, MSc, PT, Osteopat^a, İrem Yapar, MD^b, Furkan Keskin, MD^c, Rukset Attar, Prof^d

^aPhysiotherapy and Rehabilitation Department, Health Sciences Faculty, Yeditepe University, ^bYeditepe University, School of Medicine, ^cMaltepe University, School of Medicine, ^dDepartment of Obstetrics and Gynecology, Yeditepe University, School of Medicine, Istanbul, Turkey

Contact details: Ayça AklarÇörekçi, ayca@aycaaklar.com

Introduction: Dysmenorrhea is a painful syndrome accompanying with the menstrual cycle. The suggested prevalence of dysmenorrhea in general population alters from 47% to 80%. The present study is designed as a cross sectional study. As the exact prevalence of dysmenorrhea is unclear, we aimed to estimate the incidence of menstrual pain among female university students in İstanbul, Turkey.

Methods: Five hundred twenty female students were involved in this study. The pain experience of the students during menstruation period were noted by using the Visual Analogue Scale (VAS). Pain scores were grouped as 1 to 3 mild, 4 to 7 moderate and 8 to 10 severe dysmenorrhea.

Results: Among 520 students, 83% were experiencing pain during menstruation. Almost two-third of the females considered their dysmenorrhea level as severe and moderate. %45.1 of the students were using medication to reduce the pain. %8.1 of the volunteers were having pelvic pain that is lasting more than 6 months and not related to menstruation. Pathological conditions: such as endometriosis, inflammatory diseases of the pelvis, adenomyosis, intrauterine adhesions, ovarian cysts and pelvic congestion syndrome, which may be related with secondary dysmenorrhea was present almost around %1, 2 of the study population.

Conclusions: The results indicate that there is a high prevalence of dysmenorrhea (83%) among Turkish female university students. Since the present study was performed among participants in a more specific age range the incidence of chronic pelvic pain (8.1%) in our study was different from the previous studies (3.1%).

Source of Financial Support: No financial support.

Disclosures/Conflicts of Interest: There is no disclosure and no conflicts of interest.

Correlation between premenstrual syndrome and depression among university students

Ozge Unlu, PT Student^a, Basak Ezgi Un, PT Student^a, Aslı Yeral, PT, MSc^b, Deniz Aslan, PT, MSc^b, Rukset Attar, Prof^c, Erkut Attar, Prof^c, Ayça AklarÇörekçi, MSc, PT, Osteopat^b

^aHealth Sciences Faculty, Yeditepe University, ^bPhysiotherapy and Rehabilitation Department, Health Sciences Faculty, Yeditepe University, ^cDepartment of Obstetrics and Gynecology, School of Medicine, Yeditepe University, Istanbul, Turkey

Contact details: Ayça AklarÇörekçi, ayca@aycaaklar.com

Introduction: The study aimed to understand the relationship between depression and PMS. Premenstrual syndrome (PMS) is an array of symptoms that occurs during the second half of the menstrual cycle. The symptoms of PMS typically include one or more of the following: depression, tiredness, anxiety, breast swelling, and tenderness.

Methods: The research is designed as a correlational study.

Results: The study included 200 university students aged between 18 and 25 with a mean age of 22.10 ± 1.95 . The researchers conducted a structured questionnaire to find out about socio-demographic characteristics and general health conditions. The PMSS was used to evaluate the students' PMS. PMS was considered to exist in students whose PMSS total score was ≥ 111 . Also, Beck's Depression Inventory was used to evaluate the psychological status of students. Beck's Depression Inventory is classified as minimal between 0 and 9, mild between 10 and 16, moderate between 17 and 29, and severe depression between 30 and 63 score. The study revealed that among all the participants 94 had minimal, 69 had mild, 33 had moderate and 4 had severe depression scores. Young women with PMS indicated higher scores in Beck's Depression Inventory. Statistical analysis of our study showed a positive correlation between PMS and Beck's Depression Inventory Score ($P < 0.05$).

Conclusion: The study showed that the increase in PMS scores may cause an increase in depression scores or vice versa. Therefore, young women experiencing PMS could be taught to deal with psychological problems to maintain their well-being.

Source of Financial Support: No financial support.

Disclosures/Conflicts of Interest: There are no disclosure and conflicts of interest.

Investigation of thoracolumbar mobility in musicians with and without pelvic pain

Alime Buyuk, DPT(c)^a, Neriman Temel Aksu, PhD Student^a, Erdem Demir, DPT^b, Nihan Yagisan, Prof^c, Levent Sankcioglu, Prof^d

^aPhysiotherapy and Rehabilitation Department, Faculty of Health Sciences, Akdeniz University, ^bAlanya Accessible Park and Recreation Center, ^cConservatory Department, Akdeniz University, ^dDepartment of Anatomy, School of Medicine, Akdeniz University

Contact details: Alime Buyuk, alimebuyuk@gmail.com

Introduction: The aim of the study was to investigate the spinal mobility of the vertebral column between musicians with and without pelvic pain.

Methods: A descriptive study in professional musicians. A physical and postural examination was performed to collect global and segmental vertebral angles in sagittal upright and sagittal sitting planes with a special device which is called Spinal Mouse. Thirty professional musicians aged between 33.45 ± 7.8 were recruited for the study. Professional musicians were categorized into 2 groups with and without pelvic. The examination included an interview, measuring of somatic characteristics, and evaluation of body posture by spinal mouse device.

Results: The thoracolumbar parameters of the musicians' spine in the sagittal plane differ from the pelvic pain group. Musicians who have pelvic pain was characterized by statistically more significantly decreased mobility of their thoracolumbar section of the spine in comparison with musicians without pelvic pain ($P < 0.05$). Musicians with pelvic pain had spinal flexion mobility in T9-10 (4.9 ± 1.5) and T10 to 11 (6.2 ± 2.5), and spinal range of flexion in T12-L1 (4.7 ± 1.8) and L1-2 (6.3 ± 2.5) at the

standing position in the sagittal plane. Musicians without pelvic pain had spinal flexion mobility in T9-10 (6.7 ± 3.3) and T10 to 11 (8.1 ± 3.1) and spinal range of flexion in T12-L1 (6.9 ± 2.1) and L1-2 (11.6 ± 2.5) at the standing position in the sagittal plane.

Conclusions: The analysis of body posture in the sagittal plane revealed that, in the group of musicians with pelvic pain had significant limitation of spinal mobility mainly in the thoracolumbar region.

Source of Financial Support: None.

Disclosures/Conflicts of Interest: None.

Prevalence of premenstrual syndrome among female university students

Basak Ezgi Un, PT Student^a, Ozge Unlu, PT Student^a, Deniz Aslan, PT, MSc^b, Asli Yeral, PT, MSc^b, Rukset Attar, Prof^c, Erkut Attar, Prof^c, Ayça AklarÇörekçi, MSc, PT, Osteopat^b

^aHealth Sciences Faculty, Yeditepe University, ^bPhysiotherapy and Rehabilitation Department, Health Sciences Faculty, Yeditepe University, ^cDepartment of Obstetrics and Gynecology, School of Medicine, Yeditepe University, Istanbul, Turkey

Contact details: Ayça AklarÇörekçi, ayca@aycaaklar.com

Introduction: Premenstrual syndrome (PMS) is a common condition in young and middle-aged women that occurs during the late luteal phase of the menstrual cycle. This study aimed to estimate the prevalence of PMS among female university students. This study aimed to estimate the prevalence of PMS among female university students.

Methods: The present study is designed as a cross sectional study.

Results: This study included 218 female university students aged between 18 and 25 with a mean age of 22.10 ± 1.95 years. Eighteen of 218 subjects who had a mental illness and menstrual disorders were excluded due to not being eligible for the inclusion criteria. A structured questionnaire was applied by researchers to get information about socio-demographic features and general health conditions. Students' premenstrual symptoms were evaluated by using the Turkish version of the Premenstrual Syndrome Scale. This study showed that PMS prevalence was 54.5% in female university students. Students' average scores obtained from the PMS scale were found to be 113.20 ± 31.78 . More than two-thirds of students reported "Pain" (68.5%) as being the most common symptom in PMS. In the present study, the prevalence of a depressive mood, appetite, sleep changes, and irritability in PMS was found 65%, 59.5%, 56%, and 52%, respectively.

Conclusion: The current study revealed that the prevalence of PMS is considerable (54.5%) among female university students in Istanbul, Turkey. According to study results, the most frequent complaints in PMS were pain, depressive mood, changes in appetite, sleep changes, and irritability, respectively.

Source of Financial Support: No financial support.

Disclosures/Conflicts of Interest: There are no disclosure and conflicts of interest.

Investigation between sexual and pelvic floor dysfunction on women with fibromyalgia—preliminary study

Alime Buyuk, MPT^a, S.Yaprak Cetin, DPT^a, Ayse Ayan, MD^b

^aPhysiotherapy and Rehabilitation Department, Faculty of Health Sciences, Akdeniz University, ^bDepartment of Rheumatology, University of Health Sciences Antalya Training and Research Hospital

Contact details: Alime Buyuk, alimebuyuk@gmail.com

Introduction: Fibromyalgia syndrome (FMS) is a tender points disease, causing widespread pain in multiple muscles group. This leads to hypertonia and affect of pelvic floor muscle dysfunction. The disease overwhelmingly affects middle aged women. These women have symptoms of dyspareunia, bladder pain, urinary urgency/frequency, and pain with bowel movement. Although pain symptoms including headaches, back pain, myofascial pelvic pain, dyspareunia and constipation are common in patients with FMS but their pelvic floor health and functions have been rarely evaluated. The aim of study was investigation of pelvic floor and sexual dysfunction in patients with FMS.

Methods: Twenty-nine patients with FMS with an average age of 49.00 ± 8.71 were included in the study. Pelvic floor dysfunction of patients with FMS were evaluated by the Pelvic Floor Distress Inventory-20 (PFDI-20), Pelvic Floor Impact Questionnaire-7 (PFIQ-7) and Pelvic Organ Prolapse/Urinary Incontinence Sexual Function Questionnaire (PSIQ12) and sexual function were evaluated by Female Sexual Function Index (FSFI).

Results: A moderate negative correlation was found between the pain sub parameter of FSFI and CRADI-8 ($P: 0.040$, $r: -0.491$), UDI-6 ($P: 0.020$, $r: -0.436$), PFDI-20 ($P: 0.026$, $r: -0.420$).

Conclusion: This study showed that the more pain during sexual intercourse causes the more pelvic pain dysfunctions in women with FMS. This study conclude that pelvic floor and sexual functions of patients have been negatively affected. Further studies need to recommend pelvic health physiotherapy and educational program about pelvic floor dysfunction in FMS.

Source of Financial Support: None.

Disclosures/Conflicts of Interest: None.

Prevalence of coccygodynia in women undergoing pelvic floor physical therapy for pelvic pain syndromes

Cynthia E. Neville, PT, DPT, WCS, Aakriti Carrubba, MD, Anita Chen, MD

Mayo Clinic Jacksonville

Contact details: Cynthia Neville, neville.cynthia@mayo.edu

Introduction: The goal of this study was to identify the prevalence of coccygodynia, a painful condition of the tailbone, in women with pelvic pain and to describe the association with pelvic floor symptoms.

Methods: Retrospective cohort analysis.

Results: Of 171 patients included, 63 (36.8%) had coccygodynia and 108 (63.2%) did not. Patients with coccygodynia had significantly higher rates of muscle spasm (50.8% vs 27.8%, $P = 0.003$), higher scores on the Pelvic Floor Distress Inventory (PFDI) (median 96.8 vs 79.2, $P = 0.010$), higher visual analog scale (VAS) pain scores (median 5 vs 3, $P = 0.004$), higher rates of outlet dysfunction constipation (31.7% vs 12.0%, $P = 0.002$), increased opioid usage (12.7 vs 3.7%, $P = 0.026$), and higher rates of fibromyalgia (15.9% vs 5.6%, $P = 0.025$). On pelvic exam, patients with coccygodynia were significantly more likely to have sacrococcygeal joint hypermobility (17.5% vs 6.5%, $P = 0.024$), sacrococcygeal joint hypomobility (65.1% vs 9%, $P < 0.001$), coccygeus muscle spasm (77.8% vs 10.2%, $P < 0.001$), anococcygeal ligament pain (63.5% vs 5.6%, $P < 0.001$), external anal sphincter pain (33.3% vs 1.9%, $P < 0.001$), impaired pelvic floor muscle (PFM) endurance (57.1% vs 40.7%, $P = 0.038$), and impaired PFM coordination (92.3% vs 53.5%, $P = 0.001$).

Conclusions: Up to 36.8% of patients with pelvic pain had co-existing coccygodynia. These patients had higher pain scores, increased pelvic floor dysfunction, more pelvic floor symptoms, and more abnormal physical exam findings of the PFM and coccyx. This study demonstrates a strong link between coccygodynia, pelvic floor symptoms, and pelvic pain, and highlights the importance of screening for and identifying coccyx pain when evaluating women with pelvic pain.

Source of Financial Support: None.

Disclosures/Conflicts of Interest: None.

Qualitative analysis of the group dynamic in a mind-body intervention for young women with moderate to severe primary dysmenorrhea

Catherine R. Temme, MA, Laura Seidman, Laura Payne, PhD
McLean Hospital

Contact details: Catherine Temme, ctemme@mclean.harvard.edu

Introduction: The aim of the study was to explore women's perceptions about a group mind-body intervention for dysmenorrhea. Primary dysmenorrhea (menstrual pain without an identified biological cause) affects roughly 45% to 95% of menstruating women. A recent group mind-body intervention conducted by our team demonstrated feasibility, acceptability, and preliminary efficacy at reducing menstrual pain, but women's perceptions of the group dynamic had not been explored.

Methods: Participants included 18 young women ages 18 to 24 years (mean = 21.0 SD = 2.3) who experienced a mean level of menstrual pain of 7.9 (SD = 1.1) on a 0 to 10 (0 = none, 10 = worst pain possible) numeric rating scale. Treatment modules included psychoeducation, mindfulness, de-catastrophizing, and coping skills. Researchers conducted semi-structured interviews with individual participants and group interviews during the final group intervention session of each cohort. Researchers conducted deductive, iterative thematic analysis and coded the interview transcripts independently; discrepancies were resolved by consensus discussion.

Results: Two themes were generated: *benefit* and *logistics*. The benefit theme included 2 sub-themes: (1) *camaraderie* (an emotional, psychological, or social connection between participants); and (2) *sharing* (information, advice, or stories/experiences gleaned from another participant). The logistics theme highlighted how the structure of the group (eg, group size, how communication was facilitated, etc.) influenced the dynamic and was divided into 2 sub-themes according to the time frame being described: (1) *group experiences* (participants' experiences with how the group dynamic was facilitated); and (2) *future* (how the group structure could be improved).

Conclusion: Results of this study contribute to the growing body of literature related to group mind-body interventions for pain conditions. Future research is needed to optimize the group dynamic and evaluate its specific therapeutic role in the treatment.

Source of Financial Support: This research was supported by grants from the National Institute of Child Health and Human Development (K23HD077042; PI: Laura A. Payne), UCLA Children's Discovery and Innovation Institute (Seed Grant Award; PI: Laura A. Payne), and National Center for Advancing Translational Sciences UCLA Clinical and Translational Science Institute (KL2TR000122; PI: Steve Dubinett).

Disclosures/Conflicts of Interest: n/a.

Self-management of endometriosis-associated dyspareunia: patient-perspective evidence to inform online resource development

Leah Tannock, BSN, RN^a, Fuchsia Howard, RN, PhD^a, Heather Noga, MA^b, Kiran Parmar, BSc^a, Megan Larente^c, Darinka Aguirre^c, Jessica Sutherland^c, Angie Feret^c, Lauren Gelfer^c, Sarah Lett^c, Paul Yong, MD, PhD, FRCSC^a

^aUniversity of British Columbia, ^bWomen's Health Research Institute, ^cEndometriosis Patient Advisory Board, BC Women's Hospital + Health Centre

Contact details: Leah Tannock, leah.tannock@cw.bc.ca

Introduction: The aim of this study was to describe patients' perspectives of the strategies they use to self-manage dyspareunia, and their priorities in revising a preliminary online platform and developing additional eHealth resources.

Methods: In this qualitative, Interpretive Description study, we conducted 20 in-depth, semi-structured interviews with women with endometriosis-associated dyspareunia who were asked to review the Sex, Pain & Endometriosis website. The ultimate outcome being a description of patients' perspectives of (1) their responses to, and self-management of, challenges related to endometriosis-associated painful sex, and (2) their preferences and priorities in the development of online resources.

Results: Overall, self-management of endometriosis-associated dyspareunia largely centred on self-advocacy. Key to this self-advocacy were; (1) experiences that validated the physical symptoms and psychosocial sequelae, (2) personal perseverance, (3) ongoing communication with partners and healthcare providers, (4) the acquisition and personalization of evidence-based and experiential information, and (5) finding trustworthy healthcare providers. While the development of resources for partners and to facilitate communication with physicians were the top priorities for future endeavors, additional eHealth strategies to support each of the 5 components of self-advocacy were identified.

Conclusions: In the context of endometriosis-associated dyspareunia, the creation of eHealth resources that acknowledge and support self-advocacy and addresses patient priorities, presents a critical opportunity to design and deliver innovative and engaging patient-centred information that has the potential to enhance patient quality of life.

Source of Financial Support: Funding for this study was provided by the Canadian Institutes of Health Research (CIHR) [PGT 156084].

Disclosures/Conflicts of Interest: Paul J. Yong is supported by the Health Professional Investigator Award from the Michael Smith Foundation for Health Research.

New and persistent pelvic pain following hysterectomy in patients with prior chronic pelvic pain

Hannah M. Jones, MD^a, Erin T. Carey, MD, MSCR^b, Maha Al Jumaily, MBBS^b, Kristin Moore, PhD, MPH^b

^aEast Carolina University, ^bUniversity of North Carolina, Chapel Hill

Contact details: Hannah Jones, hannahmjones64@gmail.com

Introduction: Hysterectomies are a common treatment for chronic pelvic pain (CPP) although their efficacy remains unclear. Our investigation compared the risk of new or persistent pain following hysterectomy in women with and without pre-existing CPP.

Methods: To evaluate the postsurgical pain outcomes for women with or without pre-existing CPP, we retrospectively analyzed the outcomes of 246 patients who underwent hysterectomies at UNC hospitals from 2016 to 2018. We defined new pain as pain that developed within 12 months following hysterectomy and chronic pain as pain that predated or led to surgery.

Results: Thirty-two women (13%) were diagnosed with CPP. They had a significantly higher risk of having persistent pain following surgery ($P < 0.01$). Of women with CPP, 39% had new post-surgical pain compared to 18% of patients without CPP ($P < 0.01$). Chronic opioid use was higher prior to and following surgery for women with CPP ($P = 0.02$). In addition, women with CPP were younger ($P < 0.01$) and more likely to have comorbidities of pelvic floor tension myalgia ($P < 0.01$), low back pain ($P = 0.02$), temporomandibular pain ($P < 0.01$), endometriosis ($P < 0.01$), and chronic migraines ($P = 0.02$). They had smaller uteri ($P = 0.01$) and a higher use of ERAS protocol ($P = 0.02$).

Conclusion: We found that women with CPP prior to a hysterectomy are more likely to experience persistent pain following surgery and have a higher risk of developing chronic postsurgical pain than women having hysterectomies for other indications.

Source of Financial Support: None.

Disclosures/Conflicts of Interest: None.

Cannabis use among women with chronic pelvic pain

Joren Manz, B.Sc^a, Erin Kelly, MD^b, Momoe Hyakutake, MD^c, Jane Schulz, MD^c

^aUniversity of Alberta, Faculty of Medicine, ^bDepartment of Obstetrics and Gynaecology in the Faculty of Medicine and Dentistry, University of Alberta, ^cDepartment of Obstetrics and Gynaecology, Division of Urogynecology, University of Alberta

Contact details: Joren Manz, joren@ualberta.ca

Introduction: The aim of the study was to determine the prevalence and efficacy of cannabis use among women with chronic pelvic pain (CPP). CPP is a debilitating condition affecting women worldwide. Currently, there is no literature regarding the use and efficacy of cannabis in women with CPP.

Methods: An online cross-sectional survey administered to outpatients in the CPP clinic in Edmonton, Canada to determine the use and efficacy of cannabis for symptom control. The survey was based on questions from the Canadian Cannabis Survey and the Brief Pain Inventory. Patients were recruited during their appointments and emailed the survey.

Results: Thirty-five percent used cannabis and 39% of non-users wanted to try it. Among cannabis users, 71% reported pain relief and 51% reported a positive effect on their quality of life. Forty-three percent of respondents report cannabis use for improvement in acute pain and 70% for chronic pain. 80% reported an improvement in sleep. Thirty-three percent of respondents reported decreasing their use of opioid and non-opioid based analgesics. Fifty-seven percent reported side effects included cough, anxiety, and increased appetite.

Conclusions: Many women use cannabis to deal with the CPP. Minimal side effects were reported. Patients reduced their use of opioids and other analgesic medications. Benefits of using cannabis include improvement in sleep, chronic and acute pain, mood, social/family life, and quality of life. Understanding the prevalence, benefits, and effects of using cannabis as therapy for CPP is an important step toward further research into the areas in which cannabis may be used for CPP treatment.

Source of Financial Support: This project was supported by the Women and Children's Health Research Institute as well as the David and Beatrice Reidford Research Scholarship.

Disclosures/Conflicts of Interest: No disclosures or conflicts of interest.

A feasibility study to determine the need for an interdisciplinary approach to managing chronic pelvic pain

Allana Munro, MD, FRCPC, Elizabeth Randle, MD, FRCSC
IWK Health Centre

Contact details: Allana Munro, ammunro@dal.ca

Introduction: Managing Chronic Pelvic Pain (CPP) is challenging due to the multifactorial etiology, diagnostic uncertainties, and the complex treatments.¹ Many women may seek help but have a long wait from referral to clinical assessment. The objectives of the study were to determine (1) the number of women with CPP referred to Gynecologists, the Pain Management Unit (PMU) and the Emergency Department (ED) yearly (2) the wait times (3) the number of visits annually. (4) develop a demographic description and referral pattern for CPP patients.

Methods: With ethics approval, billing codes for "pelvic pain" and "endometriosis" identified CPP visits between August 1, 2018 and July 31, 2019. Electronic health records confirmed new or repeat appointments and wait time. The source of new referral and the number of Gynecology, PMU and ED visits per year were documented. Biomedical data and medical or surgical management for CPP was extracted.

Results: There were 1351 Gynecology visits, 77 PMU visits and 595 ED visits for CPP. The average age was 36.47 (SD = 9.53). Wait time for consultation averaged 119 days (SD = 75) for Gynecology and 368 days (SD = 424) for PMU, with 2.3 visits per patient. Most were referred by a general practitioner ($n = 74.3\%$) for endometriosis $n = 39$ (20%). The most common previous surgeries, interventions and medications trialed historically were: laparoscopy ($n = 90$, 44.6%), Cesarean delivery ($n = 28$, 13.9%), physiotherapy ($n = 23$, 11.4%), counselling ($n = 18$, 8.9%), hormones ($n = 150$, 74.3%), and antidepressants ($n = 47$, 23.2%).

Conclusion: Many women suffer from CPP, present frequently to the ED, and experience significant wait times to access specialty consultation.

Source of Financial Support: This work was supported by the IWK Foundation's Translating Research into Care Healthcare Improvement Research Funding Program [IWK 1024655, 2019].

Disclosures/Conflicts of Interest: No conflicts of interest to disclose.

Impact of duration of pelvic floor physical therapy on pain disability in female chronic pelvic pain

Lisa Laurenzana^a, William Adams, PhD^b, Lauren Westbay, MD^b, Stacey Bennis, MD^b, Colleen Fitzgerald, MD^b

^aLoyola University Chicago Stritch School of Medicine, ^bLoyola University Medical Center

Contact details: Lisa Laurenzana, llarenzana@luc.edu

Introduction: The aim of this study was to determine the association between duration of pelvic floor physical therapy (PFPT) and improvement in pain disability in female chronic pelvic pain (CPP). The PDI was validated to assess quality of life in CPP patients. The utility of the PDI as an outcome measure for improvement after PFPT has not been evaluated.

Methods: Retrospective longitudinal study. Primary Outcome: Pain Disability Index (PDI). Secondary Outcome: PHQ-9, GAD-7. Demographics, treatment recommendations, number of PFPT sessions, baseline and follow up PDI scores were collected for 317 female patients at a multidisciplinary CPP program. Linear mixed-effects models estimated the change in PDI score from baseline as a function of elapsed time, number of PFPT sessions, and their interaction.

Results: About 70% (n = 218) of the sample were prescribed PFPT and 159 had documented participation. The association between the count of PFPT sessions and the change in the PDI score depended on time from baseline (interaction $P < 0.001$). After one month, participants' PDI score increased 0.25 points for every additional PFPT session completed ($P = 0.047$). After 2 years, participants' PDI score was not associated with the number of PFPT sessions completed ($P = 0.29$). Controlling for the number of PFPT sessions completed, the PDI score declined by -0.12 points for every month increase from baseline ($P = 0.01$).

Conclusions: As measured by the PDI, functional ability in female CPP does not improve with increased PFPT sessions but does improve over time. Further research on the effect of PFPT components and provider experience is warranted with greater assessment of PFPT quality vs quantity alone.

Source of Financial Support: None.

Disclosures/Conflicts of Interest: None.

A virtual transition in management of pelvic pain

Alexander Wang, MD, Chensi Ouyang, MD, Jorge Carrillo, MD, Jessica Feranec, MD, Georgine Lamvu, MD, MPH
Orlando VA

Contact details: Alexander Wang, alexanswa@gmail.com

Introduction: Chronic pelvic pain (CPP) is a disabling disease which disproportionately affects women veterans. VA patients can receive care in person or via telehealth modalities such as telephone and Virtual Video Connect (VVC). The aim of this study was to describe the effect of COVID-19 on patient volume and telehealth use in a pelvic pain clinic.

Methods: This descriptive study conducted at the Orlando VA consisted of patients evaluated for pelvic pain. The primary outcomes were (1) change in patient volume and (2) use of telehealth modalities 90 days before and after the activation of the VA Pandemic Crisis Plan (PanCAP). This study was limited to CPP encounters identified by ICD-10 codes for myalgia, muscle spasm, endometriosis, dyspareunia, dysmenorrhea, and pelvic and perineal pain. Pearson's Chi2 was used to compare frequencies and a two-sided alpha < 0.05 was used to determine statistical significance.

Results: There were 465 encounters before PanCAP activation (89.9% in person, 1.3% VVC, and 8.8% phone). After PanCAP, there were 307 total encounters (22.8% in person, 8.5% VVC, and 68.7% phone). There was a significant decrease in face-to-face visits with increases in telephone and VVC encounters, $P < 0.00001$.

Conclusions: After activation of PanCAP, we found a significant shift towards use of telehealth. The challenges faced by providers and patients using telehealth modalities will need to be subject of future research to ensure accessibility to care.

Source of Financial Support: There was no financial support for this project.

Disclosures/Conflicts of Interest: The authors report no conflicts of interest.

One-year efficacy of multidisciplinary treatment in vulvodynia patients

Kristian Rubio Lorenzo, MD, Guillermo Fernández Lizana, MD, Ana Belén Bolívar de Miguel, MD, Laura Marqueta Marqués, MD, Alvaro Díez Álvarez, MD, Estela Lorenzo Hernando, MD, PhD
12 de Octubre Hospital

Contact details: Kristian Rubio Lorenzo, krrubio@yahoo.com

Introduction: Vulvodynia is defined as vulvar pain present for at least 3 months without clear identifiable cause. Etiology is not completely understood but is related to vulvovaginal infection, trauma and hormonal variations.

Methods: Analysis of 56 patients who attended our consultation in which vulvodynia was the main gynecological between 2015 and 2018. Diagnosis was made by detailed anamnesis and a cotton swab test. Pelvic floor muscles were also assessed. When allodynia was present, neuromodulator drugs and topic anesthetics were prescribed. If myofascial pain, benzodiazepine ovules and physical therapy approach was added. Women with myofascial pain resistant to primary therapy were referred to local infiltrations. A visual analogical scale 0 to 10 (VAS) was used to evaluate pain perception. Data were analyzed using Student's paired t tests.

Results: Mean age of women at diagnosis was 42.5 years. The most relevant onset events were delivery (37.5%) and previous vulvovaginal infection (12.5%), 62.5% had concomitant myofascial pain. In the baseline VAS test, mean score was 6.05, 6 months after treatment it was 4.22 which is a mean reduction of 1.83 (30%) from the baseline ($P = 0.001$). Nine patients (16%) referred no pain (VAS 0). One-year reevaluation mean VAS score was 3.54. This is a pain reduction of 2.51 (41.5%) from the baseline ($P = 0.003$). Twenty (35.7%) had no pain.

Conclusions: Long term multidisciplinary approach for vulvodynia is a valid treatment with significant reduction of VAS score pain. Myofascial pain should be a major target in management of these patients.

Source of Financial Support: There is no financial support in our clinical or research activity.

Disclosures/Conflicts of Interest: There are no conflicts of interest for any of the authors of our presentation.

Block of the transverse plane of the abdomen and perineal botulinum toxin as a treatment of chronic pelvic pain

Kristian Rubio Lorenzo, MD, Guillermo Fernández Lizana, MD, Jaime Sanz Pablos, MD, Ana Belén Bolívar de Miguel, MD, Alvaro Díez Álvarez, MD, Laura Marqueta Marqués, MD, Estela Lorenzo Hernando, MD, PhD
12 de Octubre Hospital

Contact details: Kristian Rubio Lorenzo, krrubio@yahoo.com

Introduction: Chronic pelvic pain in general and the myofascial syndrome of the levator ani muscle is a complex pathology whose perpetuation over time causes symptoms at the level of the abdominal muscles that usually respond to infiltration with anesthetic.

Methods: After diagnosis of myofascial syndrome of the oblique muscles, rectus abdominis, and levator ani muscle (LAM), patients underwent ultrasound-guided abdominal block of the transverse plane of the abdomen with instillation of local anesthetic under the fascia of the muscles oblique abdominal muscles and an infiltration of 100 IU botulinum toxin A in LAM (compassionate exemption).

Results: The techniques were performed on a total of 14 women. All of them have undergone infiltrations of the affected muscle groups with local anesthetic with a positive response although not very sustained over time, for which they are indicated to perform TAP and infiltration of LAM with botulinum toxin. The mean VAS prior to infiltration with local anesthetic was 7. In the clinical evaluation 4 months after infiltration the mean VAS was 4.18. The only complications described were 2 flu-like syndromes and 3 with self-limited urinary incontinence.

Conclusions: The combination of anesthetic blockade of the transverse abdominal plane and botulinum toxin in the levator ani muscle represents an effective and long-lasting treatment in patients in whom infiltrations with local anesthetic improve their symptoms in an incomplete and time-limited manner.

Source of Financial Support: There is no financial support in our clinical or research activity.

Disclosures/Conflicts of Interest: There are no conflicts of interest for any of the authors of our presentation.

Comparison of anxiety, quality of life and sleep quality between premenopausal and postmenopausal women

Eda Urhun, PT student^a, Deniz Aslan, PT, MSc^b, Asli Yeral, PT, MSc^b, Ayca AklarÇörekçi, MSc, PT, Osteopat^b, Rukset Attar, Prof Dr^a, Erkut Attar, Prof^c

^aYeditepe University, ^bPhysiotherapy and Rehabilitation Department, Health Sciences Faculty, Yeditepe University, ^cDepartment of Obstetrics and Gynecology, School of Medicine, Yeditepe University, Istanbul, Turkey

Contact details: Ayca AklarÇörekçi, ayca@aycaaklar.com

Introduction: Some complaints associated with changes during menopause include hot flushes, muscle joint pain, vaginal dryness, urinary problems, irritability, malaise, mood swings, and sleep problems. We aimed to investigate and compare the anxiety and quality of life of women in the premenopausal and postmenopausal period, as well as their sleep quality.

Methods: The research is designed as a correlational study.

Results: The study included 72 women divided into 2 groups of 36 as premenopausal and postmenopausal had a mean age of 38.72 ± 3.42 years and 52.41 ± 2.47 years, respectively. A structured questionnaire was applied to get information about socio-demographic features and general health condition. SF-36, Pittsburgh Sleep Quality Index (PSQI) and Beck Anxiety Inventory (BAI) was used to understand the quality of life, the sleep quality of the participants and the level of anxiety, respectively. Physical function and pain sub-parameters of SF-36 were found statistically significant between 2 groups ($P < 0.05$). PSQI score was higher in the premenopausal group, but there were no significant differences between the groups ($P = 0.38$). Also, the BAI score was higher in the postmenopausal group, but this difference was not statistically significant ($P = 0.44$).

Conclusion: The results indicated that pain and physical function parameters of SF-36 get worse with menopause in both groups. In conclusion, in addition to information and education programs for menopause, performing these activities with groups that experience the same feelings during this period may help women to prepare physically and mentally for this new period of life.

Source of Financial Support: No financial support.

Disclosures/Conflicts of Interest: There are no disclosure and conflicts of interest.

Dyspareunia in women with inflammatory bowel disease: a systematic review and meta-analysis

Tamara Aviles, MD^a, Ruben Barrera, MD^a, Bo Peng, PhD^b, Jonah Imee R. Talavera, BSc^b, Madgy Mikhail, MD, FACOG, FACS, FRCOG, FRCS^a

^aBronx Care Hospital Center, ^bThe American University of the Caribbean, School of Medicine, St. Maarten, Netherland Antilles

Contact details: Tamara Aviles, taviles@bronxcare.org

Objective: To assess the association of dyspareunia and inflammatory bowel disease (IBD).

Study design: Systematic review and meta-analysis.

Introduction: Pathological changes in IBD can potentially have a negative impact on sexual function. Dyspareunia can cause marked distress and interpersonal conflict among patients. Highlighting this association may increase providers' awareness and early intervention.

Methods: Electronic search of 4 databases using MESH terms: "dyspareunia," "sexual pain," "inflammatory bowel disease," "ulcerative colitis" (UC) and "Crohn's disease" (CD). Publications from database inception date to July 31, 2020, studying the association between dyspareunia and IBD were included. GRADE criteria was used for quality assessment. Chi-square test was used for statistical analysis; results were presented with Odds Ratio (OR) with 95% Confidence Interval (CI). Heterogeneity was presented with I².

Results: Five studies were included. Elevated dyspareunia odds were found in women with IBD compared to women without (OR = 1.89, 95% CI 1.13–3.17, $P = 0.01$; I² = 57%). Odds of dyspareunia were increased in women with CD compared to IBD-free women (OR = 2.04, 95% CI 1.43–2.91, $P < 0.0001$; I² = 0%). No differences were observed in women with UC compared to IBD-free controls (OR = 1.15, 95% CI 0.83–1.59, $P = 0.39$). Risk of dyspareunia did not differ between women with CD and those with UC (OR = 1.34, 95% CI 0.89–2.02, $P = 0.16$; I² = 21%).

Conclusions: Increased odds of dyspareunia may be present in women with IBD. CD but not UC, is associated with increased dyspareunia. High quality investigations are warranted to elicit association between sexual pain and IBD.

Source of Financial Support: None.

Disclosures/Conflicts of Interest: The authors have no disclosures or conflict of interest to declare.

The effect of a brief mindfulness meditation based intervention on women with chronic pelvic pain

Lindsay E. Clark Donat, MD^a, Jennifer Reynolds, DPT^b, Lauri Friedman, DPT^b, Ellen Flynn, MD, MTS^c, Margaret Bublitz, PhD^c, Sarah D. Fox, MD^a

^aAlpert Medical School of Brown University/Lifespan, ^bLifespan, ^cAlpert Medical School of Brown University

Contact details: Lindsay Clark Donat, lclarkdonat@gmail.com

Introduction: Chronic pelvic pain is a common disorder affecting up to 20% of women. Currently, there is a small body of literature supporting the benefit mindfulness meditation-based stress reduction interventions for the treatment of this condition. The purpose of this study was to evaluate if a brief mindfulness-based intervention, incorporated into pelvic floor physical therapy visits, reduced pain levels and catastrophizing behaviors in women with chronic pelvic pain.

Methods: This study is a single arm prospective pilot study of women with chronic pelvic pain being treated at a pelvic pain program. Participants were treated weekly by a pelvic floor

physical therapist that integrated a 10 to 15 minutes pre-taped meditation exercise as part of the treatment. Pain scores and pain catastrophizing scores were assessed at the beginning and end of the program.

Results: Twenty women were recruited to participate in the study. On average, patients had 2.6 pelvic pain diagnoses such as endometriosis, dyspareunia, and vulvodynia. Fifty percent of participants ($n = 10$) completed the physical therapy with mindfulness program. Of the women that completed the study, there was a decrease in average pain scores, maximum pain scores, and a significant decrease in Pain catastrophizing scores. Additionally, pain catastrophizing scores increased among women who withdrew from mindfulness training.

Conclusions: We found that women who completed an 8-week program incorporating a brief mindfulness based intervention into routine pelvic floor physical therapy had improvement in pain catastrophizing and pain, suggesting a benefit to mindfulness-based exercises as a treatment option for women with chronic pelvic pain.

Source of Financial Support: None.

Disclosures/Conflicts of Interest: The authors have no disclosures.

Severe dysmenorrhea is the primary contributor to low physical quality of life in Canadian women with endometriosis

Teresa Flaxman, PhD^{a,b}, Suzannah Wojcik, BHSc^a, Caitlin A. Jago, MSc MD FRCSC^{b,c}, Sukhbir Singh, MD FRCSC^{b,c,d}

^aOttawa Hospital Research Institute, ^bDepartment of Obstetrics and Gynecology, Faculty of Medicine, University of Ottawa, ^cDivision of Gynecology, Department of Obstetrics, Gynecology, and Newborn Care, The Ottawa Hospital, ^dDepartment of Clinical Epidemiology, Ottawa Hospital Research Institute

Contact details: Caitlin Jago, cjago@toh.ca

Introduction: To compare quality of life (QoL) in women presenting for endometriosis care to the general population and identify significant factors associated with reduced physical and mental QoL.

Methods: Women with clinically suspected or surgically confirmed endometriosis were recruited from a tertiary care gynecology clinic from 2017 to 2020. Participants completed the Endometriosis Phenome and Biobanking Harmonization Project Clinical Questionnaire, the International Pelvic Pain Society Pelvic Pain Assessment Form, and the Medical Outcome Survey (SF-36). Differences in group SF-36 scores were compared to Canadian normative data for women aged 35 to 44 years. Participants were categorized into “high” and “low” QoL groups based on physical (PCS) and mental (MCS) component summary scores. Logistic regressions were performed between PCS/MCS groups and patient demographics, endometriosis related symptomatology, endometriosis type, treatment history, and diagnostic delay. Significant factors ($P < 0.05$) were entered into a final regression model. Odds ratios (OR) > 1 indicated higher likelihood of low PCS/MCS score.

Results: Endometriosis participants scored significantly less in all SF-36 subdomains than the normative data (mean% difference = 16–47%). Significant factors associated with low PCS scores: age dysmenorrhea began (OR = 0.92; 95% CI = 0.85–0.99), severe dysmenorrhea (OR = 4.85; 95% CI = 1.58–14.89), dyspareunia (OR = 10.26; 95% CI = 1.26–86.47), dysuria (OR = 4.39; 95% CI = 1.47–13.01), non-cyclic pelvic pain (OR = 4.05; 95% CI = 1.36–12.06), and number of endometriosis symptoms (OR = 2.02; 95% CI = 1.29–3.18). In the final model, only severe

dysmenorrhea remained significant (OR = 5.27; 95% CI = 1.06–33.73). No factors were associated with MCS scores.

Conclusions: Endometriosis negatively impacts QoL with scores up to 47% lower than the general population. Severe dysmenorrhea was the primary contributor to poor physical QoL highlighting the importance of treating menstrual pain as a primary outcome in this population.

Source of Financial Support: None.

Disclosures/Conflicts of Interest: Sukhbir Sony Singh disclosed that money was paid to their institution from Abbvie, Bayer, and Allergan for industry sponsored research in endometriosis and uterine fibroids. Abbvie, Bayer, Allergan and Hologic also have paid directly for time spent in advisory boards and preparing educational materials not related to current subject matter. The other authors declare no conflicts of interest.

Dysmenorrhea among high-school students and its associated factors in Kuwait

Fatima Abdulaziz^a, Sharefah Al-Matouq^a, Abdullah Al-Taiar, MD^b, Dana Al-Basri^a, Hessah Al-Mutairi^a, Mona Al-Enzi^a, Ohood Al-Mutairi^a

^aFaculty of Medicine, Kuwait University, ^bCollege of Health Sciences, Old Dominion University

Contact details: Fatima Abdulaziz, fatma.alrahal@gmail.com

Introduction: This study aimed to estimate the prevalence of dysmenorrhea among female high-school students in Kuwait and investigate factors associated with it. This is a cross-sectional study conducted on a representative sample of female high-school students at twelfth grade.

Methods: Students were selected using probability proportional to size sampling after stratification by governorate. We used face-to-face interview with a questionnaire to collect data on dysmenorrhea and presumed risk factors from 763 students. The menstrual pain was assessed using a visual analog scale (VAS). The association between dysmenorrhea and potential risk factors was assessed using multiple logistic regression.

Results: The 1-year prevalence of dysmenorrhea was found to be 85.6% (95% CI: 83.1%–88.1%). Of the participants with dysmenorrhea, 26% visited the hospital for their pain and 4.1% were hospitalized because of it. Furthermore, 58.2% of students with dysmenorrhea missed at least one school day and 13.9% missed at least an exam. Age of menarche (P -value = 0.005), regularity and flow of the menstrual period (P -value = 0.025, P -value = 0.009; respectively), and drinking coffee (P -value = 0.004) were significantly associated with dysmenorrhea in multivariate analysis.

Conclusion: Dysmenorrhea seems to be highly prevalent among female high-school students in Kuwait, resembling that of high-income countries. Although it is not a life-threatening condition, our data suggest dysmenorrhea as a major public health problem among female students causing social burden on families and students alike in addition to affecting school attendance.

Source of Financial Support: This study was not funded (personal savings).

Disclosures/Conflicts of Interest: There are no disclosures or conflict of interest between authors. Note: This abstract was published in BMC Pediatrics journal. Our work was accepted as a poster in RCOG 2020 Congress recently, however, this congress is now cancelled unfortunately without me having the chance to present this abstract in any international meetings before I graduate medical school in 2 months. I have inquired about this issue and was advised to state the fact of publication upon submission hoping you take this into your consideration. Thank you.

Assessing pelvic floor muscle activation responses to pressure at the vulvar vestibule: a novel approach using an electronic vulvalgesiometer

Flavia I. Antonio, PT, PhD^a, Marina Rodrigues, PT, Master^b, Layla Mitri, Undergraduate student^a, Ana Brennan, Master candidate^a, Linda McLean, PT, PhD, Full Professor^a

^aUniversity of Ottawa, ^bUniversidade Federal do Rio Grande do Sul - UFRGS

Contact details: Flavia Antonio, fignacio@uottawa.ca

Introduction: This study aimed to determine whether the amplitude of pelvic floor muscle (PFM) electromyographic responses (EMGs) recorded from the pubovisceralis (PV), external anal sphincter (EAS) or bulbocavernosus (BC) muscles differ based on the intensity (low vs moderate) or site [vaginal fourchette (VF) vs the posterior thigh (PT)] of applied pressure. We designed the V-QueST, as a means of evaluating vulvar pain sensitivity and PFM responses to pressure applied at the vulvar vestibule.

Methods: A cross-sectional study was performed. The primary outcome was the amplitude of PFM EMGs to pressure applied using a novel electronic Vulvalgesiometer, the V-QueST. Using the V-QueST, pressure was applied 5 times to each site (VF/PT) using low and moderate force, fully randomized. EMGs were acquired using suction electrodes placed intravaginally (PV) and adhesive electrodes placed over the BC and EAS. All electrodes were interfaced with a Delsys EMG system, and signals were digitized (2000 Hz), rectified and smoothed using standard techniques.

Results: Sixteen healthy women aged 28 (± 6) years participated. EMGs were observed in all PFMs when pressure was applied at the VF, but were seen only in the EAS when pressure was applied at the PT. Responses to pressure at the VF were higher when the stimulus was moderate [EAS = 20 ± 10 μ V; PV = 1 ± 4 μ V; BC = 2 ± 4 μ V] than when it was low [EAS = 12 ± 10 μ V; PV = 0 ± 0 μ V; BC = 0 ± 1 μ V] ($\alpha = 0.05$).

Conclusions: PFM EMGs are significantly different by stimulus site and are modulated by pressure intensity in healthy women. This approach may be useful in the evaluation of PFM involvement in vulvar pain conditions.

Source of Financial Support: Funding for this work was provided through operating grants to Dr. Linda McLean from the Natural Sciences and Engineering Research Council of Canada and from the Canadian Institutes of Health Research.

Disclosures/Conflicts of Interest: None.

Surgical outcomes for superficial peritoneal endometriosis and pelvic pain

Caroline E. Lee, MD, FRCSC, Paul Yong, MD, PhD, FRCSC, Catherine Allaire, MD, FRCSC, Mohamed Bedaiwy, MD, PhD, FACOG, FRCSC, Christina Williams, MD, FRCSC

University of British Columbia

Contact details: Caroline Lee, celee.lee@icloud.com

Introduction: Recently, the role of conservative surgery for superficial peritoneal endometriosis has been questioned. Our study evaluates the impact of surgery for superficial peritoneal endometriosis on the Endometriosis Health Profile (EHP)-30, pain and psychological measures.

Methods: Our prospective cohort study included women presenting to our centre between December 2013 and July 2016 and underwent surgery for superficial peritoneal endometriosis and pelvic pain. Outcomes of interest were assessed at baseline, 6 months, and 18 months after surgery. The impact of conservative surgery on surgical outcomes, and predictors of these outcomes, were determined using mixed-effects linear regression modelling.

Results: Our study population included 160 women with an average age of 30.0 ± 6.3 and BMI of 25.0 ± 5.4 kg/m². We found a statistically significant improvement in EHP-30 scores over time ($P < 0.001$). In addition, all pain and psychological outcomes improved with time except for superficial dyspareunia ($P = 0.11$). Lower BMI and hormonal therapy at the time of surgery were predictive of greater improvement in surgical outcomes.

Conclusion: Surgical intervention for superficial peritoneal endometriosis was associated with improvement in all surgical outcomes except for superficial dyspareunia. Greater improvement was seen if women were on hormones at the time of surgery and had a lower BMI. A randomized controlled trial is suggested to confirm our findings.

Source of Financial Support: The study was supported by a Canadian Institutes of Health Research (CIHR) Operating Grant [MOP142273], the Women's Health Research Institute, and the BC Women's Hospital and Health Centre Foundation.

Disclosures/Conflicts of Interest: None.

Treatment of myofascial pelvic pain with a novel transvaginal photobiomodulation laser

Neeraj Kohli, MD, MBA^a, Angela R Stoehr, MD^b, Barry Jarnagin, MD^c

^aOb/Gyn, Harvard Medical School, ^bNurture Womens Health, Frisco, TX, ^cCenter for Pelvic Health, Franklin, TN

Contact details: Neeraj Kohli, nkohli@bostonurogyn.com

Introduction: The prevalence of myofascial pelvic pain amongst women with chronic pelvic pain likely exceeds 50 percent. 1 to 4 This paper provides an analysis of real-world patient-reported outcomes, following treatment of female myofascial chronic pelvic pain with a novel photobiomodulation therapy.

Methods: The SoLá Therapy near Infra-red Photobiomodulation laser (Uroshape, LLC) touch screen user interface queries patients using validated medical questionnaires (NRS/Wong-Baker and PGIC). A coded, limited data set was analyzed. An additional analysis of Clinical Global Impression was also performed. The primary objective of this analysis is to determine the effects of a proprietary deep tissue transvaginal photobiomodulation laser system (TV-PBMS) on the overall pain score (NRS). The secondary objective of this analysis is to determine the effects of this novel TV-PBMS on specific pelvic pain symptoms.

Results: Mean overall pain NRS reduction of ≥ 1 and ≥ 2 points was achieved by final treatment for 80% and 68% of patients ($P < 0.0001$, $P < 0.0004$). These patients experienced a mean decrease in overall pain of 50% and 55% respectively (NRS ≥ 1 , NRS ≥ 2). Forty-seven percent of all women completing therapy were reduced to mild or no overall pain (0–3 NRS). The mean number of treatments to maximum pain reduction was 4.3 ± 3.7 treatments. Clinician Global Impression of Change at a mean of 6 months found 87 percent of patients to be improved.

Conclusion: Women with myofascial pelvic pain, undergoing treatment with a proprietary transvaginal photobiomodulation laser system achieved a significant reduction in multiple pain symptoms. This benefit was achieved regardless of associated pelvic pain diagnosis.

Article history:

Received 29 March 2021

Received in revised form 12 May 2021

Accepted 12 May 2021