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The Effectiveness of Therapeutic Interventions for the Management of Vulvodynia: An Integrated Literature Review

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The Effectiveness of Therapeutic Interventions for the Management of Vulvodynia: An Integrated Literature Review

by

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Abstract

Problem: Vulvodynia, an unexplained vulvar pain, is a medical condition affecting women of all ages, races, and ethnicities and causes pain levels ranging from very mild discomfort to extreme suffering.

Purpose: The purpose of this study was to explore women's knowledge toward seeking care for vulvodynia and to explore the different types of treatments prescribed after diagnosis. The secondary purpose of this review was to describe the treatments most effective in reducing pain caused by vulvodynia.

Methods: A review of the literature was conducted using articles from 2001 to 2021 that focused on diagnosis of vulvodynia and the relief of pain with various types of treatment options for women diagnosed with vulvodynia. Multiple databases were used, and world-wide research was compiled for context on diagnosis of vulvodynia and treatment options that worked best to reduce pain. From the literature review, 14 articles met the inclusion criteria and were used to compare diagnosis of vulvodynia and the different treatment methods to relieve pain.

Results: All studies suggest women did not seek immediate care or have a timely diagnosis for vulvodynia because of speculation by health care providers that vulvodynia is a pseudoscience. Women avoided seeking early diagnosis due to embarrassment discussing the condition and fear of skepticism about the level of pain associated with vulvodynia. The studies showed topical ointments and complementary treatments were the most prescribed agents. Effectiveness ranged from no pain relief to complete relief, but the conclusions were relatively similar in all the results. A multidisciplinary approach to vulvodynia, with mental health professionals and gynecologic providers had the best outcomes in relieving pain and optimizing treatment.

Conclusion: Knowledge about vulvodynia is very limited due to under diagnosis and embarrassment of admitting that something is wrong. Most of the research conducted was a general overview of cases and is focused on diagnosis of the condition. Benefits of therapy differ from woman to woman and complete pain relief, or remission is elusive in many instances. CAM therapies in combination with medications for individuals with vulvodynia to alleviate pain can be useful and finding multiple methods that can be used together for pain relief is of value for further research.

Dedications

For my mentor, Dr. Leslee D'Amato-Kubiet, for encouraging me to persevere and always providing a helping hand.

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Thank you to all who helped me complete this review of literature. Thank you to my thesis chair, Dr. Leslee D'Amato-Kubiet. Your guidance and support were instrumental in helping me figure out my direction when crafting my paper. Thank you to my committee member, Dr. Angeline Bushy. Your knowledge and patience were appreciated beyond understanding. Thank you to the University of Central Florida College of Nursing instructors and staff.

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Introduction

In the United States, approximately 14 million women experience unexplained vaginal pain at some time in their lives. Approximately 16% of all women experience a condition called Vulvodynia, unexplained vaginal pain. It is expected 30% of all women with vulvodynia will suffer with the condition and forego seeking any medical treatment or intervention. Medical attention is frequently not pursued for women with symptoms of vulvodynia due to lack of knowledge or embarrassment about the condition, resulting in unnecessary chronic, discomfort and suffering. Several types of treatments and therapy are available for women with vulvodynia and the phenomena needs requires directed discussion and non-judgmental care between a woman and her provider. Vulvodynia is a multifactorial condition with subjective symptoms varying greatly between women and viable treatment options can be tailored to provide relief for each woman (Vulvodynia/Vestibulodynia, 2020).

Available treatment options are not precise, and guidelines differ, since a large percentage of women with vulvodynia do not seek treatment until the condition is advanced. Variance in clinical manifestations from woman to woman is subjective. Variability in clinical manifestations and level of discomfort to discuss the issue with a provider by women who aren't expressing their pain can be inhibitory to traditional research methods about the condition. Prescriptive drug therapy and complementary and alternative medicine (CAM) can be used individually or in combination for the treatment of vulvodynia, but an increased willingness to discuss vaginal problems often prevents their use. Methods to encourage women to discuss vaginal pain and early diagnosis of vulvodynia can lead to early treatment and relief. Although the underlying mechanism related to vulvodynia is poorly understood, further research into

women's understanding of the condition and options for therapy is of value to addressing the condition.

Problem statement

The diagnosis of vulvodynia and quantifying universal treatments for women suffering from the condition is difficult identify in a population. Although pharmacologic therapies such as topical hormones and anesthetics are the first line of treatment and therapy for vulvodynia, alternative and complementary therapies, as adjuvant therapy with prescribed agents, can be implemented when developing a treatment plan to alleviate pain and increase QOL in women with vulvodynia. Complementary therapies, such as biofeedback, pelvic floor, and transcutaneous electrical nerve stimulation (TENS) along with home remedies such as loose-fitting clothing, non-scented products and urination after sexual activity are effective when used together. The use of CAM therapies in conjunction with prescriptive pharmacologic agents for vulvodynia can be evaluated as effective combinations to alleviate pain.

The effects of CAM, as well as the combination of pharmacologic therapies with CAM, in women with vulvodynia have diverse outcomes for the relief of pain in women with vulvodynia. Research suggests several alternative therapies can have a positive impact on pain in women with vulvodynia, leading to an overall increase of the QOL in women with the condition. However, the research is vague and does not give a specific combination of therapies that are beneficial when used together. Further research is needed to understand vulvodynia and if there are specific treatments in CAM and pharmacologic treatments best relieving pain when used together, as well as the benefits each treatment can provide for the different types of vulvodynia.

Evidence suggests a combination of therapies are the most effective for treating the pain associated with vulvodynia and increasing the quality of life for women. There are many

unanswered questions concerning vulvodynia along with the CAM and pharmacologic treatments that work best together.

Purpose

The purpose of the literature review was to explain women's vulvodynia and explore the CAM and pharmacologic treatment methods used to treat the pain associated with the condition. Evidence describing improvement in pain and overall QOL related to combination treatments used to treat vulvodynia is sparse. Additionally, knowledge about vulvodynia is very limited due to under diagnosis and embarrassment of admitting something is wrong within the pelvic region of the body. Individualized therapy for vulvodynia and women's benefits from differing treatments that relieve the pain of vulvodynia makes it difficult to offer specific cures. CAM therapies in combination with medications to alleviate pain for individuals with vulvodynia can be useful in finding tailored and individualized therapy to give women the highest possible QOL.

The secondary purpose of this literature review was to explore women's knowledge about seeking care for vulvodynia and discuss reasons women avoid seeking care for the condition.

Background

Unexplained vaginal pain, also termed vulvodynia, is described subjectively by women as affecting the vulva, lasting longer than 3 months, and has no specific origin or triggering factor. (Sorg, 2001) The vulva is part of the external section of the vaginal and includes the vestibule, the labia minora majora and the clitoris. (American Cancer Society,2021) There are several different types of vulvodynia described in the literature. Generalized vulvodynia occurs in different areas of the vulva and may occur in increments. Localized vulvodynia is limited to one area of the vulva and is usually characterized by a burning sensation resulting from touch or pressure in the area and surrounding tissues. Most forms of vulvodynia are idiopathic and have a multifactorial origin. Vulvodynia can be influenced by infection, hyper-stimulated nerve endings, stretching or irritation of uterosacral ligaments (USL) or by some other unknown mechanism. Identifying vulvodynia with a specific etiology can be elusive. The etiology and pathophysiology of vulvodynia is variable and a scant amount of research linking the causative factors for vulvodynia has been difficult to specify. Vulvodynia is a subjective, painful sensation differing from woman to woman and has a complex underlying etiology that is poorly understood by health care providers.

Although the condition is experienced by a large subset of women and is often debilitating, it can go undiagnosed for years. Women with the condition have daily vaginal pain and discomfort but do not recognize the symptoms and consider the pain as a normal phenomenon, causing the condition to be under diagnosed and treated. Women recognizing the pain in the vaginal canal is abnormal are often too embarrassed to talk about it with anyone, including friends, family members or health care providers, leading to further discomfort and embarrassment. Lack of recognition and discomfort discussing chronic vaginal pain are the

primary reasons vulvodynia is left untreated and are due to a combination of lack of knowledge and understanding about vulvodynia and the stigma that women should not discuss pain associated with the reproductive organs. Even when women diagnosed with vulvodynia become discouraged after the diagnosis is made because the process leading to diagnosis can be tainted by disbelief or lack of a diagnostic test to confirm the condition. The word “vulvodynia’ can cause woman discomfort and anxiety. It is estimated, 65% of women are uncomfortable using the words vagina or vulva and 45% of women are uncomfortable talking about vaginal problems in any setting, including with a health care provider. Women expect to live with the pain and accept it as a normal part of life.

Vulvodynia is a treatable condition and is associated with a chronic diagnosis. A combination of pharmacological and complementary and alternative (CAM) therapies has the greatest effect on decreasing pain associated with vulvodynia. There is no standard therapy for all women with vulvodynia. Every woman has a different experience, and several different combinations of therapy can be tested before one is found to be effective. The combination of therapy has the anticipated effect of alleviating pain or pressure in vaginal tissues and increasing quality of life in women with vulvodynia. several common treatments having the greatest effect in alleviating the pain associated with vulvodynia include:

Home remedies:

- Unscented detergents
- 100% cotton underwear
- Loose fitting clothing

Pharmacological remedies:

- Topical estrogens

- Topical anesthetics (lidocaine)
- Antihistamines

Alternative therapies:

- Biofeedback
- Transcutaneous electrical nerve stimulation (TENS)
- Physical therapy

Once an effective treatment method is established, women can live a relatively comfortable life without pain. Since vulvodynia is not a one size fits all diagnosis and treatments are multifactoral, combination therapy from all three categories seems to work the best. A mixture of a topical estrogen with a topical anesthetic along with loose fitting clothes and unscented fragrances seems to have the best outcomes. In some instances of provoked vulvodynia where a specific cause can be identified, surgical extraction of the vestibules is effective. There is no specific treatment for all cases of vulvodynia no matter which category of the condition a woman experiences on a daily basis. All women have different experiences with vulvodynia and what works for one does not necessarily work for all.

Method

A comprehensive review of the literature was performed using research articles available from 2001 to 2022 regarding the types of treatments for vulvodynia and which treatments best relieved pain and increased QOL in women. The focus was related to the different treatment types used alone and in combination with other agents for vulvodynia. Databases used to search for articles included EBSCO host databases, Medical Literature On-Line (Medline), Cumulative Index to Nursing and Allied Health Literature (CINAHL), and JSTOR databases. Searches will use a combination of the following terms: Vulvodynia*, unexplained vaginal pain*, alternative*, complementary*, pharmacologic*, benefit*, therapies*, and treatments*. Inclusion criteria will consist of 1) published research in English, 2) complementary and alternative therapies in combination with prescriptive agents, and 3) the various types of vulvodynia and which combination of treatments works best with each. Articles excluded focused on individual therapies for vulvodynia outside of the main stream of standard practice and combination therapies with no significant effect on the QOL of the women.

The data was compiled into a table that synthesized the relationship between the benefits of CAM in combination with pharmacologic treatments in alleviating pain and improving QOL in women with vulvodynia. Additional information on the benefits of AM in combination with pharmacologic treatments will be tabled based on the information obtained. Data will show the evidence for the use of CAM and pharmacologic treatments in combination for the treatment of individuals suffering from vulvodynia was explored (Appendix A).

Results

A review of eleven articles was conducted utilizing inclusive criteria to determine which treatments for vulvodynia were the most effective. Of these eleven, only four were from the United States. The methods of study consisted mostly of questionnaires and experimental trials. None of the articles yielded a definitive treatment option which corresponds with the idea that women are afraid to even seem treatment for this condition based on the ideology behind it. By many, it is viewed as a pseudoscience since for most women, there is no specific cause. Because of this speculation, women avoid seeking treatment all together or prolong a diagnosis. However, of the options available, a multidisciplinary approach with mental health providers and gynecologic intervention had the best outcomes in relieving pain and optimizing treatment. Four articles suggested that a multidisciplinary approach to treating pain associated with vulvodynia was the most effective. Therapeutic interventions for vulvodynia included pelvic floor training, topical/oral drug therapy (lidocaine, steroids, anti-inflammatories), lifestyle modifications, and cognitive behavioral therapy (CBT).

Pharmacologic Intervention

Drug therapy was one of the main therapeutic interventions examined when determining effective treatment options for vulvodynia. Several of the pharmacologic options available to reduce pain associated with vulvodynia included lidocaine, antihistamines, steroids, and antifungals. The type of drug therapy prescribed depended on the provider along with the symptoms and onset, but the majority of agents were orally and topically administered. The function of the agents prescribed for vulvodynia was to reduce pain and alleviate symptoms associated with the condition. Antihistamines were used to alleviate itching and to help women get more rest. Lidocaine or other local topical anesthetics was used for sexual relief and was recommended to be applied “30 minutes before sexual

intercourse to reduce your discomfort." (Advocare,2021) Steroids were used to reduce the immune response in hopes of reduce inflammation. And finally, anti- fungal/ antibiotics were used if the anticipated origin was an infection.

In the study conducted by Rey Novoa (2021), a local anesthetic, procaine, was injected into the study participants and pain was evaluated before and after the injection. Results suggested the placebo group had no significant pain reduction while the group that received the injection noted a pain reduction from greater to seventy percent to less than thirty percent in three of the participants while the other two experienced complete relief. The relief seemed to last until the follow up appointments and as long as six months from the initial injection. Several of the participants still experiencing pain relief past the expected date. This was the only study to provide statistical analysis in correlation with effectiveness of the intervention.

In another study, 367 participants were contacted regarding a topical medication they were given for pain relief related to vulvodynia. The medication was "amitriptyline 0.5% plus oestriol 0.03% in organogel" (Ruoss,2021) which is used to treat neuropathic pain. All age groups saw a relief in pain in at least 50% of the participants with the age group of 30-50 seeing the greatest pain relief. The number of participants in each age group was not determined but the medication is seen to be effective in majority of women regardless of age. According to the experiment, "topical AOO is an effective and well-tolerated treatment for vulvar pain" (Ruoss,2021) and more research into this medication could prove to be very effective in treating pain associated with vulvodynia.

Complementary and alternative interventions

Another type of intervention used for pain relief in vulvodynia CAM. CAM includes pelvic floor therapy, transcutaneous electrical nerve stimulation (TENS), and lifestyle

modifications such as wearing loose fitting clothing, avoiding baths, wearing 100% cotton underpinnings, and avoiding scented products in the pelvic region. CAM interventions were used in combination with drug therapy in all the articles reviewed and synthesized for the treatment of pain in vulvodynia. No single study discussed CAM therapy alone as a therapeutic intervention for vulvodynia. The studies including CAM did not evaluate CAM as an independent variable from prescriptive agents and discussed pharmacological therapy in conjunction with CAM as a single quantifiable variable. Therefore, traditional interventions alone may not be enough to relieve the pain caused by vulvodynia.

Experimental Procedures

There were also a experimental procedures used as a therapeutic intervention for vulvodynia. This included the study by Schonfeld and the mechanical support of uterosacral ligaments (USL) and the study by Hurt that explored extracorporeal shock wave therapy in pain relief caused by vulvodynia.

In the study by Schonfeld, participants diagnosed with provoked vulvodynia were tested for an improvement in their condition when support was added to the uterosacral ligaments. For the trial group, a wide swab that was sufficiently broad was added to mechanically support the USL. The support was expected to relieve the pressure of the pelvic structures off the nerve plexuses thought to be causing the muscular dysfunction associated with provoked vulvodynia. However, the overall pain reduction seen with the trial manipulation was only 18.4% making the overall effectiveness of treatment not successful.

Another experimental procedure conducted in women with vulvodynia of an idiopathic origin focused on the use of extracorporeal shock wave therapy (ESWT). The “device used was a

standard electromagnetic shock wave unit with a focused shock wave handpiece" (Hurt,2020) to deliver shock to the perineal area weekly. Of the 31 women receiving the treatment, all recorded a pain reduction of greater than 30% that stayed constant and the follow ups at one, four, and six weeks. The other 31 participants the received the placebo recorded no significant pain reduction from baseline. This experiment if conducted with a larger sample group in different places around the country could prove to be an effective therapeutic intervention in the treatment of vulvodynia.

Multidisciplinary Approach

All of the articles reviewed and synthesized to answer the research questions focused on the use of multiple therapies to treat vulvodynia to optimize pain relief. The use of drug therapy along with CAM was found to have the greatest effect on alleviating pain associated with vulvodynia.

In the study by Mitchell, Australia women on average reported feeling the most relief when seeing a combination of specialist, utilizing pelvic floor training, taking topic/oral medication, and having an overall idea of what encompasses vulvodynia. The specialist included a general practitioner, medical specialist, and physiotherapist. The medications used were not specific for the treatment of vulvodynia but proved to be effective when used in combination with the other interventions. Another study by Goldstein focused on the same exact interventions but went into even less detail regarding specifics. Both articles expressed multiple interventions used in combination were necessary to get optimal pain relief however no scientific basis for pain relief was offered.

Discussion

The studies examined in this literature review offer positive insight into CAM combined with prescriptive drug therapy for the pain associated with vulvodynia. The synthesis for the study also provided insights into the reasons why women do not seek treatment for vulvodynia or receive delayed diagnosis for the condition. Research findings showed the benefits of using a multidisciplinary approach as therapeutic interventions for vulvodynia, however, results were often surface. Although many of the studies did not review definitive results for treatment for vulvodynia, using combination therapy to treat the pain associated with vulvodynia was the most effective form of treatment.

Studies regarding the effectiveness of therapeutic interventions regarding pain associated with vulvodynia were limited. Pharmacologic treatments were often the first line of treatment followed by lifestyle modifications and counseling but overall, the most pain relief was seen when a multidisciplinary and multi-faceted therapeutic approach was used. Most of the studies conducted for vulvodynia were a general overview of cases and focused on diagnosis of the condition and options for treatments but did not go into the effectiveness of pain alleviation.

In the study by Schonfeld which focused on supporting the uterosacral ligaments to alleviate some of the pain associated with provoked vulvodynia, an overall decrease in pain out of the seventeen subjects tested was only 18.4%. With a wider test subject base, this treatment could prove to be effective in pain alleviation over time, but this only includes the female population with provoked vulvodynia. This means that for this form of vulvodynia, there is a causative factor that is believed to be influencing the pain. And since for most women who experience vulvodynia, it is idiopathic in nature, this treatment is not much of a benefit.

The other studies focused more on the use of combination therapy to alleviate pain. Overall, benefits of therapy differ from woman to woman and complete pain relief, or remission is elusive in many instances. Vulvodynia is not a one size fits all diagnosis and can often types go undetected due to fear and embarrassment or overall lack of recognition.

This literature reviews provides different types of therapeutic interventions that are used for women who experience vulvodynia. The effectiveness of each intervention depended on the person and their baseline pain level. Treatments that provided complete relief to some provided very little to others. Most of the studies revealed that a multidisciplinary approach was most effective. The studies that did not discuss this relied on pharmacologic interventions, mostly a local anesthetic. The sample sizes in all studies were relatively small so for future experiments, it may prove beneficial to have a greater number of subjects to test true effectiveness among the female population. Studies that discussed why women are embarrassed to speak about vulvodynia and the female reproductive system in general were also limited. The lack of research about why women do not speak up and seek treatment could also be a factor that contributes to the lack of knowledge of beneficial therapeutic intervention.

In conclusion, obtaining definitive answers for effective therapeutic interventions for vulvodynia is still a way off. Most of the research conducted for vulvodynia was a general overview of cases and focused on possible treatments for the condition rather than overall effectiveness. Complementary and Alternative Medicine (CAM) therapies, in combination with drug therapy, to alleviate pain can be useful and multiple methods can be combined for optimizing pain relief. Experimental interventions along with surgical ones were also discussed although not as popular as a multidisciplinary approach. The benefits of therapy differ from

woman to woman and complete pain relief, or remission is elusive in many instances. More research is critical for continued development of interventions that could help alleviate the pain suffered by all women diagnosed with vulvodynia.

Limitations

This literature review had several limitations. Although the articles did discuss therapeutic interventions for vulvodynia, most of them did not discuss overall effectiveness. The length of effectiveness as also left out of almost all studies and the length of treatment was also not mentioned. The pieces of missing information show a gap in the literature and are important in determining if a standardized intervention for alleviating the pain of vulvodynia would be beneficial rather than trial and error therapeutic approaches. Most studies used smaller sample sizes with inconclusive data so overall effectiveness could not be determined.

In the study by Mitchell (2021) along with Goldstein (2016), the types of therapeutic interventions recommended are discussed but how effective they were was left out. Both studies again claim that a multidisciplinary approach is the most beneficial, but they do not have hard statistics to back it with. Both studies agree the first line of pain intervention in vulvodynia is a combination of drug therapy, pelvic floor therapy and CAM interventions. However, neither study goes over the amount of pain relief experienced or the length of the therapies. The types of medications complementary and alternative therapies recommended was also left out. There was also no exact sample size for the Goldstein article stating that it was based on the general population of women experiencing vulvodynia while the sample size by Mitchell (2021) was only 50 women from Australia.

Another limitation is the paucity of research articles examining why women avoid seeking care for vulvodynia. However, the study by Tornava (2018) discusses resident medical students lacked knowledge on diagnosing vulvodynia and how to treat it, showing awareness of the condition is not universal. Lack of awareness and recognizing vulvodynia as a painful health condition can contribute to avoidance behaviors in women seeking treatment seeking treatment

for the condition and feeling they are not being taken seriously. Avoidance also contributes to the perception vulvodynia is a pseudoscience because healthcare providers do not understand or recognize vulvodynia exists. There is a stigma about discussing the female reproductive system with providers and a lack of knowledge about the condition in the healthcare research, causing women to be easily discouraged to seek care for the pain associated with vulvodynia.

Implications for Nursing

Vulvodynia is a subjective phenomenon with an unknown etiology and has therapeutic interventions to relieve pain and discomfort in women when health care professionals are conversant about the condition. Healthcare providers can identify early signs of vulvodynia and ask questions that could help make an early diagnosis without discouraging women from seeking necessary treatment. Participating in open discussions with healthcare providers about vulvodynia and isolated perineal pain, including the surrounding muscular tissue and fascia structures can help women feel comfortable speaking about how they feel and getting the necessary relief for their symptoms. To get optimal care transparency, communication, and education between both the patient and the healthcare provider needs to remain top priority when addressing women's health issues. Continued research with greater sample sizes would be beneficial to determine the cause of vulvodynia and to identify common therapeutic interventions providing best relief for the condition.

Appendix A

Table of evidence

Appendix A

Author(s) Year Location	Study Design & dates	Sample Size & Screening Measures	Results	Was the research question answered?
Schonfeld (2021) Israel and Australia	prospective, single-blind, randomized, controlled pilot trial using a within-participant cross-over design. 2017-2018	N-17 Approved by institutional review board of the Galilee Medical Center of the Israeli Health Ministry Women between the age of 18-35 with moderate to severe PV. Excluded: Diagnosis of generalized vulvodynia, vulvar pain with a specific cause and previous surgical treatment.	No significant decrease in pain was detected with the sham trial compared to the trial manipulation with order of manipulation having no effect on outcome. Average decrease in pain of all subjects 18.4% Median decrease in pain of all subjects 12.5%	Somewhat. This article shows a potential treatment for provoked vulvodynia which is only a subsection for the overall question. More experiments are needed with longer sample sizes to see true effects.
Mitchell (2021) Australia	A cross-sectional online survey May-August 2019	N- 50 Criteria included a diagnosis of vulvodynia, currently residing in	Participants were recorded seeing on average 3 different types of specialists to manage their vulvodynia symptoms.	Yes, this helps to answer my question by more information is needed. This article does not specify which type of vulvodynia is being looked at and suggests that

		Australia and over the age of 18.	The most common treatment options recommended for these patients was pelvic floor training exercises, oral and topical medications, and general information.	the recommended treatments have very little evidence to back up effectiveness.
Goldstein (2016) Washington, DC, Canada, New York, and Pennsylvania	Committee review of the scientific evidence on the assessment and treatment of women's genital pain.	General population of women experiencing sexual pain.	A multidisciplinary approach is recommended for treatment of vulvodynia. Among these treatments, psychological interventions, pelvic floor therapy and medications are among first line agents.	Yes, this article helped to confirm that fact that a multidisciplinary approach is the most effective along with reiterating fact that there is little research on the most effective treatments for vulvodynia.
Ruoss (2021) Australia	Contacted via verified email to report pain levels and changes May 2017-Feb 2020	N-1174 women 1054 who agreed to participate in follow ups	Out of the 1054 participants that agreed to be contacted, only 376 responded. The greatest response was from participants who were in the 30–50-year age category with a 66.7% effective rating.	Yes, this article discusses a topical treatment for vulvodynia and the effectiveness for all age groups is significant however it does not discuss the exact sample size and it does not specify which form of vulvodynia it is being tested for.
Lua (2017) Nevada	Truven MarketScan Commercial Claims and Encounters databases 2009-2013	N- 12,584 Women over the age of 18 with a diagnosis of vulvodynia enrolled for at least a year from date of diagnosis	Out of the 24,122 women who had a diagnosis of vulvodynia, only 12,584 qualified for the study. Showing that the most common prescriptions for vulvodynia were antidepressants, opiates, antifungals and lastly steroids.	No, this article only discusses the most common medications that women were prescribed for vulvodynia but not how effective each was.
Schlaeger (2017) Illinois, China, and Florida	Exploratory study	N- 36 women A diagnosis of vulvodynia along with a TCM	Each person was given a group in the traditional Chinese medicine (TCM) category. The groups were divided into extreme cold and extreme heat. The group with	No, this article does not help to answer my although it does discuss different types of TCM, it does not provide any to date insight on how to treat vulvodynia. It only offers information that could maybe be used at a later

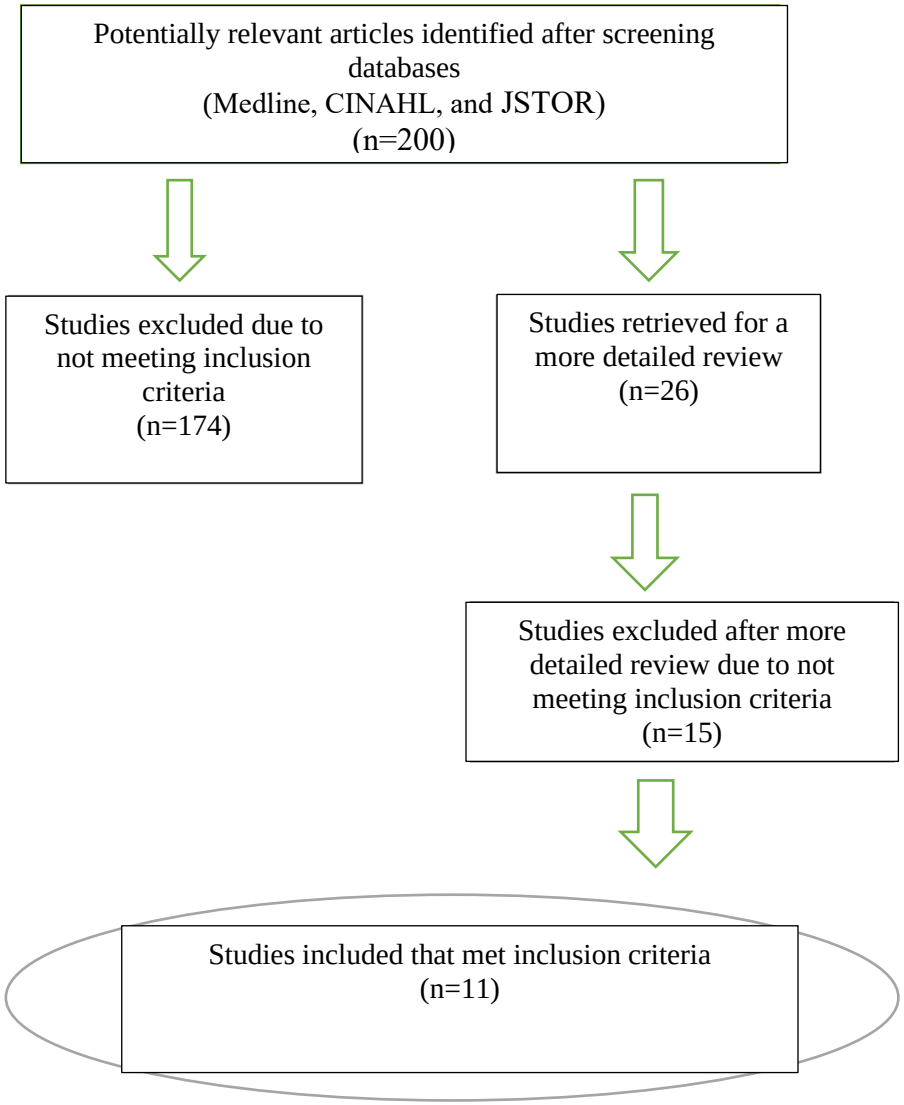
		assessment and completion of SF-MPQ	extreme heat seemed to sense pain at a higher intensity (4.1 compared to 3.3) Higher mean score for neuropathic sensory descriptors in the excess heat pattern group while higher nociceptive sensory descriptors were detected in the extreme cold group signifying that there are different ways that pain is perceived and could eventually lead to a larger discovery in terms of effective vulvodynia treatments	date once more research had been conducted on the topic.
Rosen (2021) Canada	Randomized controlled trial 2021	N-108 couples Unknown number of women with a diagnosis of provoked vulvodynia. Researchers used pretreatment demographics (age, sex, relationship length)	Researchers found that cognitive behavior couples therapy (CBCT) saw better result in improving women's sexual function post treatment when the relationship was high anxiety, lower sexual goals whereas lidocaine saw better results when the sexual goals of the relationship were also high.	Yes, it shows that when the sexual desire is high in a relationship where a woman has vulvodynia, lidocaine is an effective treatment. However, the research suggests that it may need to be done in combination with CBCT. Since the sample size was so small, further research is needed.
Tornava (2018) Finland	Cross selection Web based survey	Student healthcare professionals over the age of 18 13 different student healthcare units N-191	Student healthcare staff was shown to have irregular awareness of vulvodynia. They lacked knowing how to treat it and knowledge on what it was. They decently understood how to support patients diagnosed.	This article supports my claim that there is not enough knowledge surrounding vulvodynia along with its treatment options. It also shows that across the board in different medical units, healthcare providers are not properly diagnosing and do not know what vulvodynia is.
Rey Novoa (2021) Spain	Case series experiment	5 women, ages 33-44 years, with LVP (localized vulvar pain)	0.5% procaine which is a local anesthetic was injected into 5 participants. 2 revealed complete relief while the other 3 had significant. Pain was reduced from 70% to about 30% after intervention and maintained over time.	Yes, this article shows the effectiveness of one type of pharmacologic treatment that had already been introduced in previous studies. However, the sample size too small to determine overall effectiveness for most women suffering from pain associated with vulvodynia.

Hurt (2020) Prague	A prospective, randomized, double-blind, placebo-controlled study was conducted between 2015 and 2018 following a feasibility study.	62 women with vulvodynia for at least 3 months 31 placebo participants 31 treatment participants	In the test group, a significant decrease in pain over 30% was seen at all follow up apt using extracorporeal shock wave therapy (ESWT). (1,4 and 12 weeks.) Reductions in VAS ($P<0.01$) and CST ($P<0.01$) were also observed.	This article showed a way to attempt to treat idiopathic vulvodynia. The results were promising but the experiment needs to be conducted in other countries with larger sample sizes.
Munday (2007) USA	Retrospective, qualitative, in-depth interview study	29 women diagnosed with vulvodynia	A multidisciplinary approach was implemented involving medical evaluation and treatment, psychotherapy, physiotherapy and dietary advice of 29 women. 27 of the 29 a significant benefit in pain reduction while 9 who had completely completed the program were pain free.	Kind of. This article talks about the benefits of a multidisciplinary approach for this group of women but does not go into specifics of which type in each category was most beneficial.

Appendix B

Figure 1

Appendix B



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