

A Scoping Review of the Implications of Naprapathic Medicine in the Treatment of
Polycystic Ovarian Syndrome

by Fionda Williams Brock

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Table of Contents

Chapter 1: Introduction	3
The Crisis of Polycystic Ovarian Syndrome	3
Naprathic Implications	4
Scoping Review: Objectives	4
Chapter 2: Methodology	5
Introduction	5
Search Strategy	6
Inclusion and Exclusion Criteria	6
Data Extraction and Synthesis	6
Theoretical Frameworks	6
Application to the Review	7
Chapter 3: Naprathic Interventions for PCOS	8
Chapter 4: Naprathic Implications for PCOS Therapy	10
Terminology, Methods, and Materials	10
Search Strategy	10
Screening	10
Data Extraction and Coding	10
Discussion	11
Limitations	11
Future Research	11
Conclusion	12
Table 1: Raw Naprathic Search Data	13
References	15

Chapter 1: Introduction

The Crisis of Polycystic Ovarian Syndrome

Polycystic ovarian syndrome (PCOS) is a prevalent endocrine disorder that primarily affects women of reproductive age. It is characterized by a combination of symptoms, including polycystic appearing ovaries on ultrasonography, oligomenorrhea or amenorrhea, hirsutism, obesity, emotional disturbances, infertility, and metabolic disturbances (Chaudhari et al., 2018). The prevalence of PCOS ranges from 4% to 12% among women of reproductive age globally (Kumar, 2022). Polycystic ovarian syndrome is associated with various hormonal imbalances, such as hyperandrogenism, polycystic ovarian morphology, ovarian dysfunction, and hyperinsulinemia (Sharma, 2024). It is considered the most common endocrine disorder in women of reproductive age worldwide (Psilopatis, 2023).

Women with PCOS face a range of health challenges that extend beyond reproductive issues. They have an increased risk of developing metabolic disorders, such as diabetes, and are more prone to cardiovascular risk factors (Saleh & Ahmed, 2021). Additionally, PCOS is linked to psychological issues, including anxiety, depression, and changes in quality of life (Chaudhari et al., 2018). The disorder can also lead to complications such as infertility, ovarian cancer, skin problems, and eating disorders (Sultana et al., 2021; Rashmeen et al., 2017). The impact of PCOS on women's health is , affecting not only their physical well-being but also their mental and emotional health. Chaudhari et al (2018) note that women with PCOS may experience a reduced health-related quality of life due to the chronic nature of the condition and its associated symptoms. Furthermore, PCOS can lead to disruptions in hormonal balance, which can have implications for fertility and overall reproductive health (Elgaedy et al., 2022). The disorder can also affect the emotional well-being of individuals, leading to increased levels of anxiety and depression (Chaudhari et al., 2018). Polycystic ovarian syndrome is a complex condition that requires a multidisciplinary approach to management.

The Health Belief Model, Critical Race Theory, and Cultural Competency Model offer valuable perspectives on the application of interventions for PCOS. The Health Belief Model, developed by Hochbaum in 1958, focuses on individual beliefs and perceptions about health conditions, guiding the understanding of how individuals with PCOS perceive and engage with treatment options (Campinha-Bacote, 2002). The Health Belief Model informs the design of interventions that align with the values and preferences of individuals with PCOS. Critical Race Theory provides a framework for examining how racial disparities and systemic racism may impact the experiences and outcomes of individuals with PCOS, emphasizing the importance of addressing health inequities (Delgado & Stefancic, 2023). It prompts a critical examination of how race and racism intersect with healthcare delivery, advocating for antiracist practices to address disparities in PCOS care. The Cultural Competency Model ensures that interventions are culturally sensitive and tailored to the diverse backgrounds and needs of individuals with PCOS, promoting effective and inclusive care (Campinha-Bacote, 2002). It guides the provision of care that is respectful, responsive, and inclusive of diverse cultural backgrounds, ensuring that interventions are effective and accessible to all individuals with PCOS (Campinha-Bacote, 2002; Delgado & Stefancic, 2023).

By integrating these models, naprapathic interventions for PCOS can be designed to address not only the physical symptoms but also the psychological and social aspects of the condition. Incorporating the principles of the Health Belief Model and the Cultural Competency Model can help in developing tailored lifestyle programs for PCOS patients, as suggested by Pirodda et al (2021). This approach ensures that interventions are culturally congruent and address the unique needs of individuals with PCOS, promoting better health outcomes and overall well-being.

Naprapathic Implications

Naprapathy is a form of manual therapy that focuses on the treatment of connective tissue disorders, particularly in the musculoskeletal system. The principles of naprapathy revolve around the idea that dysfunction in the connective tissues, such as ligaments, tendons, and fascia, can lead to pain and restricted movement. Naprapaths use hands-on techniques to assess and treat these soft tissues, aiming to restore proper function and alleviate pain (Lilje et al., 2021). The practice of naprapathy combines elements of chiropractic care, physical therapy, and osteopathy, emphasizing the importance of structural balance and alignment in promoting overall health and well-being (Lilje et al., 2021).

Exploring naprapathic applications in managing PCOS is justified by the potential benefits of this manual therapy approach in addressing the complex interplay of symptoms associated with PCOS. Polycystic ovarian syndrome is a multifaceted endocrine disorder that not only affects reproductive health but also involves metabolic, musculoskeletal, and psychological components (Baldauff & Arslanian, 2015). Given that naprapathy focuses on the musculoskeletal system and aims to restore balance and function in the connective tissues, it may offer a holistic approach to managing the symptoms of PCOS.

Research has shown that naprapathy can be effective in treating common musculoskeletal disorders, such as neck and back pain, through a combination of manual techniques and exercise programs (Lilje et al., 2021). Since women with PCOS often experience musculoskeletal issues, such as lower back pain and joint stiffness, incorporating naprapathic interventions could help alleviate these symptoms and improve overall quality of life. Additionally, naprapathy's emphasis on structural alignment and balance may have implications for hormonal regulation and metabolic function, which are aspects of PCOS management (Baldauff & Arslanian, 2015). Moreover, lifestyle modifications, including physical activity and exercise, are recommended as first-line treatments for PCOS (Blackshaw et al., 2019). Naprapathy, with its focus on manual therapy and movement-based interventions, aligns well with these lifestyle recommendations and can complement existing treatment approaches for PCOS. By addressing musculoskeletal issues, improving mobility, and promoting overall well-being, naprapathy may offer a valuable adjunct therapy for women with PCOS.

Scoping Review: Objectives

In this scoping review on naprapathic applications for PCOS, the primary objectives are to determine the potential efficacy of naprapathic interventions in managing the multifaceted symptoms of PCOS and to investigate the current utilization of naprapathy for this endocrine disorder. A multidisciplinary approach, spanning lifestyle modifications, a well-balanced diet, and regular physical activity,

can play a pivotal role in reducing adiposity, enhancing metabolic functions, improving insulin sensitivity, and fostering reproductive health (Chouhan, 2023). The utilization of nutraceuticals and micronutrient supplementation has also been explored as a potential management strategy for PCOS, highlighting the importance of a holistic approach to treatment (Scannell, 2024).

By integrating theories and models such as the Health Belief Model and the Social Determinants of Health Framework, this scoping review provides a comprehensive understanding of the potential benefits of naprapathy in addressing the complex needs of individuals with PCOS. The review will also consider the cultural competence model to ensure that interventions are tailored to the specific needs and backgrounds of diverse populations affected by PCOS. Through an examination of the efficacy and utilization of naprapathic interventions for PCOS, this review contributes to the advancement of evidence-based, culturally-congruent care for individuals with this condition.

The biomedical etiologies of PCOS span a range of factors that contribute to the pathophysiology of this complex endocrine disorder. Hyperinsulinemia and insulin resistance are common biochemical features of PCOS, independent of obesity, highlighting the role of metabolic dysregulation in the condition (Zhong et al., 2022). Additionally, altered cytokine levels in the blood and ovarian follicular fluids of women with PCOS indicate a state of chronic systemic inflammation, suggesting immune dysregulation as a potential etiological factor (Albaghdadi et al., 2019). Genetic factors, such as the TRB3 Q84R polymorphism, have also been associated with PCOS, emphasizing the genetic underpinnings of the syndrome (Zhang et al., 2011). Furthermore, the presence of metabolic disturbances, abnormal glucose and lipid metabolism, and insulin resistance are characteristics of PCOS, underscoring the multifaceted nature of the disorder (Zhong et al., 2022).

Chapter 2: Methodology

Introduction

According to Mak and Thomas (2022), scoping reviews are necessary for mapping the existing literature, identifying concepts, and recognizing gaps in research. Research shows that adhering to Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines enhances transparency and reproducibility. This review focuses on naprapathic interventions for polycystic ovary syndrome due to the small size of the naprapathy profession and the far-reaching implications of its therapies. Naprapathy, a lesser-known but impactful branch of manual therapy, emphasizes the structural integrity of the body's connective tissues to improve overall health. The success and simplicity of naprapathic approaches, which often include manual manipulation, exercise, and dietary recommendations, make it important to explore their efficacy and application for PCOS. PCOS, a common endocrine disorder affecting numerous women globally, presents with a variety of symptoms such as menstrual irregularities, infertility, and metabolic issues (Bhambhu et al., 2022). By understanding the potential benefits of naprapathic interventions, this review aims to provide valuable insights into non-pharmacological treatments for PCOS, particularly within the context of culturally congruent and equity-focused healthcare practices.

Search Strategy

It is important to note that the search strategy involved identifying studies containing the term "naprapath" to ensure no references to the profession or its practices were missed. The databases utilized were Elicit, Scite, Google Scholar, and PubMed. This search was designed to capture a broad array of literature, given the relatively small size and specific focus of the naprapathic profession. Subsequently, these studies were refined to include terms related to PCOS: "polycystic," "ovary," "ovaries," "ovarian," and "ovari". This focused technique ensures that relevant studies addressing both naprapathy and PCOS are captured (Greenhalgh & Peacock, 2020). By narrowing down the search to these specific terms, the review highlights the intersection between naprapathic practices and PCOS management, ensuring that no pertinent studies are overlooked. This dual-layered approach maintains the rigor and comprehensiveness of the review.

Inclusion and Exclusion Criteria

The inclusion criteria were set to be inclusive of international studies in any language and any publication date to capture a broad spectrum of research. This inclusive approach ensures that the review is not limited by geographical or linguistic barriers, thereby providing a more comprehensive understanding of the global application of naprapathy for PCOS. The only exclusion criteria focused on non-peer-reviewed sources to maintain the rigor and credibility of the review. Peer-reviewed sources ensure the reliability and validity of the data, aligning with PRISMA guidelines (Moher et al., 2009). Excluding non-peer-reviewed sources also helps to eliminate potential biases and ensures that the studies included have undergone rigorous evaluation by experts in the field.

Data Extraction and Synthesis

In order to align with PRISMA guidelines, the process for data extraction and synthesis involved identifying studies containing the term "naprapath." Then, these studies were refined using terms related to PCOS: "polycystic," "ovary," "ovaries," "ovarian," and "ovari." These terms could appear in any field of the studies--such as the title, abstract, and body--ensuring a comprehensive review of the literature. This dual-layered approach guarantees a focused yet extensive review, capturing all relevant data (Peters et al., 2015). The extraction process involved thoroughly reviewing each study to ensure it met the inclusion criteria and accurately represented the intersection of naprapathy and PCOS. The synthesis of data then involved categorizing the studies based on their findings, methodologies, and relevance to the research question. This systematic approach ensures that the review provides a clear and coherent analysis of the existing literature, highlighting findings and identifying gaps for future research.

Theoretical Frameworks

Bronfenbrenner's (1979) Ecological Systems Theory provides a multi-layered context for understanding health interventions. Research shows that Critical Race

Theory and Intersectionality Theory highlight the importance of examining health disparities and the social determinants of health (Crenshaw, 2018; Williams & Mohammed, 2013). The Stress and Coping Theory, Health Belief Model, and Cultural Competence Model are classic models in understanding how culturally congruent, equity-focused interventions impact health outcomes (Lazarus & Folkman, 1984; Rosenstock, 1974; Campinha-Bacote, 2019). Applying these theoretical frameworks to the review allows for a deeper understanding of how naprapathic interventions can be tailored to meet the diverse needs of individuals with PCOS. By considering the broader social, cultural, and psychological factors that influence health, this review emphasizes the importance of holistic and culturally sensitive approaches in healthcare. This integration of theoretical perspectives ensures that the review not only addresses the clinical efficacy of naprapathy but also its relevance and accessibility to diverse populations.

Application to the Review

Polycystic ovarian syndrome--a complex endocrine disorder--involves biological, medical biochemistry, and allostatic mechanisms. Naprapathic interventions, emphasizing manual manipulation and holistic approaches, align with culturally congruent and equity-focused healthcare practices (Bhambhu et al., 2022). Traditional medicine and holistic health practices offer additional avenues for managing PCOS symptoms, particularly within deliberately disadvantaged communities (Arjun et al., 2019). The review explores how naprapathic interventions address the unique challenges faced by individuals with PCOS, considering both physiological and socio-cultural factors. By highlighting the potential benefits of naprapathy, the review provides evidence-based recommendations for integrating these practices into mainstream healthcare. This focus on culturally congruent and equity-focused approaches underscores the importance of addressing health disparities and ensuring that all individuals have access to effective and inclusive healthcare options.

Chapter 3: Naprapathic Interventions for PCOS

Naprapathy is a form of manual therapy that focuses on soft tissue manipulation to alleviate musculoskeletal pain and dysfunction (Budagher-Marshall, 2023). Developed in 1906 by Oakley Smith, a colleague and former student of Daniel D. Palmer, the founder of Chiropractic (Ottosson, 2011). In Sweden, Naprapathy became a licensed health profession in 1994, with practitioners known as naprapaths specializing in treating musculoskeletal issues (Sundberg et al., 2023). Research has shown that Naprapathy can be effective in managing musculoskeletal disorders. A study comparing Naprapathy to orthopaedic standard care for common musculoskeletal disorders found that Naprapathy led to greater improvements in bodily pain, physical function, and health-related quality of life over a period of 12 months (Lilje et al., 2021). Additionally, Naprapathy is associated with lower costs compared to standard orthopaedic care, making it a potentially cost-effective treatment option for such conditions (Lilje et al., 2021).

The use of complementary and alternative medicine (CAM) in healthcare settings, including Naprapathy, is on the rise. In Sweden, where Naprapathy is a licensed profession, CAM therapies are increasingly being utilized in psychiatric units to address patient needs and reduce the demand for pharmaceutical medications (Wemrell et al., 2020). This shift towards CAM therapies like Naprapathy reflects a growing interest in holistic and non-pharmacological approaches to healthcare. A study by Skillgate et al. (2010) offers valuable insights into the specific manual techniques used by naprapaths in their practice. The research discusses the long-term effects of naprapathic manual therapy on back and neck pain, highlighting a combination of manual techniques demonstrated by naprapaths, including massage, muscle stretching, spinal manipulation, spinal mobilization, and soft tissue manipulation (Skillgate et al., 2010). These techniques are aimed at enhancing physical function and reducing pain in the neuromusculoskeletal system, showcasing the comprehensive approach taken by naprapaths to address musculoskeletal issues.

Naprapaths demonstrate a range of specific maneuvers as part of their manual therapy techniques, known as Soft and Connective Tissue Manipulations (SCTM) (Paanalahti et al., 2014). These techniques span a combination of manual methods such as spinal manipulation/mobilization, stretching, and massage, all addressing shortened or pathologic soft and connective tissues that are commonly associated with musculoskeletal pain conditions (Paanalahti et al., 2014).

By utilizing various maneuvers, naprapaths target the affected soft tissues to alleviate pain and dysfunction in patients suffering from musculoskeletal issues. The manual therapy techniques used by naprapaths involve a comprehensive approach to musculoskeletal care, focusing on addressing the root causes of pain and discomfort:

Muscle Stretching Exercises: Naprapaths demonstrate muscle stretching exercises as a fundamental manual technique to enhance flexibility, reduce muscle tension, and improve range of motion in patients experiencing musculoskeletal pain (Paanalahti et al., 2016). These exercises target specific muscle groups to alleviate stiffness and promote optimal muscle function, aiding in the overall rehabilitation process. On a biomedical level, muscle stretching exercises work by lengthening the muscle fibers and increasing the elasticity of the connective tissues. This lengthening process helps in reducing the risk of injuries, enhancing blood flow, and increasing the delivery of oxygen and nutrients to the muscles. Additionally, stretching can stimulate the release of synovial fluid within the joints, which acts as a lubricant,

thereby improving joint mobility and reducing friction. The reduction in muscle tension through stretching also decreases the activation of nociceptors, which are sensory receptors that detect pain, thereby alleviating pain sensations and promoting a sense of relaxation and well-being (Skillgate et al., 2010).

Massage: Massage is a manual technique utilized by naprapaths to address soft tissue issues, promote relaxation, and improve circulation in affected areas (Paanalahti et al., 2016). Through targeted massage therapy, naprapaths can alleviate muscle tension, reduce pain, and enhance the healing process by increasing blood flow to the affected tissues. Biomedically, massage therapy stimulates the mechanoreceptors in the skin and muscles, which can lead to the release of endorphins—natural painkillers produced by the body. The increased circulation resulting from massage enhances the removal of metabolic waste products like lactic acid, which can accumulate in muscles and cause pain (Skillgate et al., 2010). Furthermore, the manipulation of soft tissues can break down adhesions and scar tissue, improving tissue elasticity and flexibility. The relaxation induced by massage also reduces the levels of stress hormones such as cortisol, promoting a state of physical and mental relaxation and aiding in overall recovery.

Spinal Manipulation: Naprapaths perform spinal manipulation techniques to restore proper alignment and function to the spine, aiming to alleviate pain and improve mobility in patients with musculoskeletal conditions (Paanalahti et al., 2016). By applying controlled forces to the spine, naprapaths can address vertebral misalignments and dysfunction, leading to improved spinal health and overall well-being. From a biomedical perspective, spinal manipulation helps to realign the vertebrae, which can relieve pressure on the spinal nerves and reduce inflammation (Skillgate et al., 2010). This realignment can enhance neural communication between the brain and the rest of the body, promoting better coordination and function. Additionally, spinal manipulation can stimulate the release of natural anti-inflammatory substances and endorphins, contributing to pain relief and an overall sense of well-being.

Spinal Mobilization: In addition to spinal manipulation, naprapaths utilize spinal mobilization techniques as a manual method to improve joint function and alleviate discomfort in patients with musculoskeletal issues (Paanalahti et al., 2016). Spinal mobilization involves gentle movements of the spine to enhance flexibility, reduce stiffness, and promote optimal spinal alignment, contributing to pain relief and improved function. Biomedically, spinal mobilization can increase the range of motion in spinal joints, reduce muscle spasms, and improve the overall biomechanics of the spine. The gentle movements help in enhancing the flow of cerebrospinal fluid, which nourishes and protects the spinal cord and brain (Skillgate et al., 2010). This can lead to improved neural function and overall health. Additionally, spinal mobilization can decrease the activation of pain pathways in the nervous system, providing relief from chronic pain conditions.

Pain Measurement: Naprapaths incorporate pain measurement as a manual technique to assess and monitor the severity of musculoskeletal pain in patients undergoing treatment (Paanalahti et al., 2016). By utilizing standardized pain measurement tools, naprapaths can objectively evaluate pain levels, track progress, and tailor treatment plans to address individual patient needs effectively. Biomedically, pain measurement involves the use of various scales and questionnaires to quantify pain intensity, duration, and impact on daily activities. These tools can include visual analog scales, numerical rating scales, and pain diaries. Accurate pain measurement allows for the identification of pain patterns and triggers, enabling naprapaths to develop targeted interventions (Skillgate et al., 2010). Additionally, tracking pain over time can help in evaluating the effectiveness of treatments and making necessary adjustments to optimize patient outcomes.

Chapter 4: Naprapathic Implications for PCOS Therapy

Terminology, Methods, and Materials

According to the PRISMA (2024) guidelines, the process for conducting and reporting systematic reviews and meta-analyses ensures transparency and reproducibility in capturing and synthesizing relevant literature. This scoping review follows these guidelines to provide a comprehensive and unbiased assessment of the available evidence on naprapathic interventions for polycystic ovary syndrome PCOS.

Search Strategy

The search strategy involved identifying studies containing the term "naprapath" across multiple databases, including Elicit, Scite, Google Scholar, and PubMed. The terms "polycystic," "ovari," "ovary," "ovaries," and "PCOS" were used to refine the search to focus on PCOS-related literature. This strategy aimed to capture all relevant studies addressing both naprapathy and PCOS. The comprehensive search was designed to ensure that no relevant studies were missed, thereby providing a thorough understanding of the existing literature.

Screening

The initial search yielded 88 hits across all databases. Screening involved examining the title, body, and abstract of each article to determine the relevance to naprapathy. Of these, 53 articles (60.23%) were identified as relevant to naprapathy, meeting the criteria of having the term "naprapath" in the title, body, or abstract. However, none of these articles addressed PCOS or any gynecological issues using the specified search terms. This indicates a gap in the literature regarding the intersection of naprapathic interventions and PCOS or related gynecological conditions.

Data Extraction and Coding

Data extraction and coding involved thoroughly reviewing each relevant study to ensure it met the inclusion criteria and accurately represented the intersection of naprapathy and PCOS. This process confirmed that no literature exists on the

implications of PCOS and naprapathic interventions within the scope of the search terms used. The absence of relevant studies highlights the need for further research in this area, particularly focusing on the potential benefits of naprapathic interventions for managing PCOS.

Discussion

The lack of relevant literature indicates several issues. Naprapathy is referred to by different names in different languages. Therefore, researchers should explore international sources that may describe naprapathy using alternative terms and practices. Additionally, manual techniques associated with naprapathy may produce results independently and might not always be explicitly categorized under naprapathy. Researchers should consider nuanced search strategies to capture relevant studies on manual techniques linked to naprapathy.

Although literature directly addressing the implications of PCOS and naprapathic interventions was not found, it is important to note that there may be articles on pelvic health or conditions that could offer insights relevant to PCOS as PCOS is also referred to other names in various languages and cultures. Exploring studies related to pelvic health and conditions could potentially provide valuable information that may be extrapolated to understand implications for individuals with PCOS.

These terminological differences must be addressed in future research to ensure a comprehensive understanding of the potential benefits of naprapathic interventions for PCOS. Furthermore, the absence of studies specifically addressing gynecological issues within the context of naprapathy suggests a gap in the literature that needs to be filled.

Limitations

The primary limitation of this review is the potential oversight of relevant studies due to terminological differences in various languages. Naprapathy and PCOS are not universally referred to by these terms, which may have resulted in the exclusion of pertinent studies. Additionally, focusing solely on the term "naprapathy" may have excluded studies addressing relevant manual techniques under different terminologies. This limitation underscores the need for a more nuanced search strategy that accounts for these variations.

Future Research

Future research must expand search strategies to include the various terminologies and manual techniques associated with naprapathy across different languages and cultures. This comprehensive approach will ensure a thorough exploration of the potential benefits and applications of naprapathic interventions for managing PCOS. Researchers must identify and use specific search parameters that correspond to naprapathy and PCOS in different languages and regions.

Additionally, exploring the relationship between naprapathic interventions and pelvic health could provide indirect evidence or insights into managing PCOS. Pelvic health issues often share commonalities with PCOS, and research in this area could reveal beneficial naprapathic techniques that are applicable to PCOS management. Furthermore, manual techniques integral to naprapathy, such as muscle stretching

exercises, massage, spinal manipulation, and spinal mobilization, must be searched independently to yield relevant results.

For a more in-depth understanding, future research should also consider conducting qualitative studies to explore patient experiences and outcomes with naprapathic interventions for PCOS. Longitudinal studies could provide valuable data on the long-term benefits and effectiveness of these interventions. Collaboration with international research teams can help to address the terminological differences and ensure a more comprehensive and culturally sensitive approach.

Conclusion

The scoping review highlights a gap in the literature regarding the intersection of naprapathic interventions and PCOS. The absence of relevant studies underscores the need for future research that accounts for terminological differences and explores the potential benefits of naprapathic interventions for managing PCOS. Studies such as those conducted by Paanalahti et al. (2016) and Lilje et al. (2021) have examined the effectiveness and long-term outcomes of naprapathy in treating musculoskeletal disorders. These studies offer valuable insights into the impact of naprapathic interventions on patient outcomes, underscoring the significance of manual therapy techniques in enhancing pain intensity, disability, and perceived recovery over time. By expanding search strategies and exploring related areas such as pelvic health, researchers can contribute valuable insights to the field and enhance the understanding and application of naprapathic interventions for PCOS. This comprehensive approach will ensure that all individuals have access to effective and inclusive healthcare options, ultimately improving health outcomes for those with PCOS.

Table 1: Raw Naprapathy Search Data



EmbedLitReview
NaprapathDN.csv

The table can be viewed in its entirety: <https://us.docworkspace.com/d/sICaYxrXtAYLsoLQG>

doi	title	abstract	pmid	year
10.1155/ 2022/225 2551	Clinical Observation of Alternative Wave Electroacupuncture Combined with Lee's Naprapathy in Treating Knee Osteoarthritis (Blood Stasis due to Qi Stagnation)	Objective. We aim to explore the clinical therapeutic effect of alternative wave electroacupuncture combined with Lee's naprapathy therapy on knee osteoarthritis (KOA) (blood stasis due to qi stagnation). Method. 122 patients with KOA treated in our hospital from January 2018 to October 2021 were randomly grouped into a combined group (n = 61) and a control group (n = 61). The combined group was treated with alternative wave electroacupuncture combined with Lee's naprapathy, while the control group was treated with alternative wave electroacupuncture alone. Clinical efficacy of the two groups was observed. The Visual Analogue Scale (VAS), Lysholm Scale, Indexes of Severity for Osteoarthritis (ISOA), and Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) were compared before and after treatment, followed up for 3 months and 6 months. The adverse reactions of the two groups were observed. Result. The overall response rate of the combined group (96.72%) was higher than that of the control group (81.97%), and the difference was statistically . After treatment and follow-up for 3 months and 6 months, the Lysholm score of the combined group was higher than that of the control group, while the VAS, ISOA, and WOMAC scores were lower than those of the	36159 565	2022

		control group, and the difference between the two was statistically . Conclusion. The alternative wave electroacupuncture combined with Lee's naprapathy is effective and safe in treating KOA (blood stasis due to qi stagnation).		
10.21037 /apm.202 0.04.16	Naprapathy attenuates neuropathic pain after brachial plexus injury	Background: This study was to explore the potential mechanism of naprapathy in treating neuropathic pain (NP) after brachial plexus injury (BPI).Methods: Totally 72 rats were randomly divided into normal group, model control group, and naprapathy group (n=24 per group). A right upper-limb chronic NP model was established, and naprapathy was administered at C5-T1 Jiaji Points on 4th day after modeling. Naprapathy was performed for 15 min once daily with a frequency of 60 per minute. The treatment was applied for altogether 28 days. Cold pain threshold and mechanical pain threshold were measured 1 day before modeling, 3 days after modeling, and 7, 14, 21 and 28 days after naprapathy; 7, 14, 21 and 28 days after naprapathy, rats were killed and the β -endorphin expression and γ -aminobutyric acid (GABA) content were detected in the thalamus.Results: After 14-day treatment, there was difference of mechanical pain threshold between the naprapathy group and the normal group ($P<0.05$); after treatment for 21 and 28 days, there was no difference between the naprapathy group and the normal group ($P>0.05$); after 28-day naprapathy, there was difference of β -EP expression between the normal group and the naprapathy group ($P<0.05$), while the difference between model control group and naprapathy group was statistically ($P<0.05$). After 14-day treatment, there was difference of GABA content between the model control group and the naprapathy group ($P<0.05$). After 28-day treatment, difference was also found between the model control group and the naprapathy group ($P<0.05$).Conclusions: After naprapathy, chronic NP is attenuated in rats with BPI, which might be ascribed to the upregulation of β -endorphin and GABA.	32312 067	2020

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