



Perspective

Integrative medicine for pelvic floor disorders: A conceptual framework

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1. Introduction

Pelvic floor disorders encompass a wide range of dysfunctions, including issues of urination, defecation, pelvic organ prolapse, pain, and sexual health. These disorders are highly prevalent, with approximately one-quarter of adult women in the United States reporting the experience of at least one of these conditions.¹ The co-occurring symptoms, arising from shared pathogenesis, have a significant impact on the patient's physical and emotional well-being, as well as impose economic burdens on both the individual and the healthcare system. Traditional single-specialty practices have proven insufficient to meet the diverse needs of patients.

To achieve better outcomes and improve patients' care, the multidisciplinary or one-stop pelvic floor center model has gained recognition since the early 2000s. It provides a platform for interdisciplinary dialogue, fostering knowledge sharing, and efficient management of complex cases.² By overcoming "turf" issues and establishing a close working relationship among subspecialists, this model offers integrated care in a single unit.

These centers are typically established by leading experts in colorectal surgery and urogynecology, who collaborate with related professionals such as gastroenterology, radiology, physiotherapy, sexual specialists, mental health, nursing personnel, acupuncturists,³ etc. The establishment of these centers has been supported by the publication of influential books in 2006⁴ and 2010,⁵ which have helped foster

consensus and collaboration among different disciplines.

Over more than two decades, the concept of multidisciplinary teamwork has evolved into the stage of Integrative Medicine. It stands for an evidence-informed integration of conventional biomedicine with traditional and complementary medicine. All appropriate therapeutic approaches and healthcare disciplines are used to achieve optimal health and healing while recognizing and respecting the unique contribution of many medical systems.⁶ This integrated approach adopts a holistic perspective that considers the patient as a whole, encompassing their physical, psychological, and emotional well-being, as well as their environment and lifestyle. The focus is on providing individualized, patient-centered care to enhance the quality of life. This model has demonstrated significant improvements in patient outcomes and coordination of care.⁷

Stanford Pelvic Health Center is one of a few in the US with experts from over seven different specialties who collaborate closely to develop a care plan tailored to patient-specific needs.⁸ This kind of model has received recognition not only within the United States but also from the community-based multidisciplinary team's government guideline in England (NICE, 2021),⁹ which promotes similar approaches to enhance pelvic health care.

Integrative medicine offers new directions for both clinical practice and research for pelvic floor disorders. This article aims to explore the conceptual framework of integrative medicine for pelvic floor disorders, discussing its implementation strategies and practical applications. It

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covers the complexities of healthcare team collaboration, patient education, and therapeutic outcome evaluation. Furthermore, it proposes strategies to expand the scope of integrative medicine, including telehealth for patient and healthcare professionals' shared training. In particular, integrative acupuncture and Chinese medicine are approaches based on Chinese practice characteristics, modeling new guidelines to promote the development of pelvic floor integrative medicine.

2. Healthcare team collaboration

2.1. Integrative pelvic floor center

To effectively implement the integrative care model, a pelvic floor center assumes the role of a physical roof or one-stop hub, ensuring streamlined patient care pathways, and aiming for optimal patient outcomes. The multidisciplinary nature of these centers facilitates collaborative decision-making and the development of tailored plans that encompass medical and non-medical approaches. Patients benefit from the collective expertise and coordinated care provided by gynecologists, urologists, colorectal surgeons, physiotherapists, and other healthcare professionals specializing in pelvic floor health.

Beyond delivering clinical care, pelvic floor centers also engage in research, education, and advocacy efforts for best practices in the field.

2.2. Interdisciplinary team

Establishing a cohesive team through collaborative leadership is a crucial strategy in this model. The leadership should possess the expertise and ability to coordinate the resources of a multidisciplinary team in a patient-centered manner and optimize contributions from each specialty.

Effective leaders in this context excel by fostering a sense of belonging among team members, recognizing individual contributions, and maximizing the team's creative work ethic through effective communication strategies. This ultimately facilitates the delivery of a seamless continuum of high-quality care¹⁰ and optimizing patient outcomes.¹¹

2.3. Care pathway

A care pathway refers to a collaborative decision-making workflow that aligns with the principles of evidence-based medicine for advanced practice providers. It delineated a pathway that encompasses integral components of value-based care, enabling team members to operate independently and make informed decisions based on their specialized expertise.¹² The implementation of a care pathway is characterized by its integration, timeliness, professional collaboration, and the capacity to measure outcomes. Additionally, it requires the utilization of an Electronic Health Record (EHR) integrated with a patient portal to facilitate effective collaboration within the healthcare team.¹³

2.4. Endeavor from China

During my tenure at a tertiary teaching hospital in China, I had the privilege of leading a pelvic floor Multidisciplinary Team (MDT). Our team was responsible for establishing a well-defined care pathway that dictated the sequencing and timing of interventions, as well as the roles and responsibilities of professionals. What set our team apart was our unique treatment protocol of integrating acupuncture, herbal medicine, biofeedback, and surgery to comprehensively address pelvic floor dysfunction.

In addition to delivering patient care, we were deeply committed to promoting and training healthcare professionals across China in the integrative pelvic floor medicine model. This involved close collaboration with experts from colorectal surgeons, acupuncturists, nursing specialists, psychologists, gynecologists, urologists, radiologists, etc. We also sought guidance from a senior advisory board to ensure the highest standards of care. To facilitate effective teamwork, we utilized an online

data management platform, which enabled comprehensive data collection, seamless communication, and efficient coordination among team members and trainees.¹⁴

We have weekly academic presentations and case study discussions for our researchers and fellows. Additionally, our involvement in international collaborative societies provided us with valuable opportunities to exchange knowledge and learn from experts worldwide to advance the understanding of pelvic floor disorders.

3. Patient-centered communication and commitment

3.1. Patient-centered communication

Improving patient education is imperative due to the prevalent lack of understanding among patients regarding their pelvic floor disorders, regardless of prior treatments or counseling. Gaining insight into the patient's perspective is essential for identifying their goals, facilitating effective communication, and enabling personalized counseling. It also aids in managing expectations and evaluating treatment outcomes.¹⁵

Patient-centered communication is a potent tool for effectively involving patients in the long-term management of their symptoms. By providing clear and easily comprehensible information that takes into account both the physical and psychological aspects of the condition, healthcare providers empower patients to take ownership of their self-care and enhance their overall well-being.

3.2. Rome Foundation example for patient education

The Rome Foundation for functional gastrointestinal disorders set a good example for patient education.¹⁶ As a leading authority in research, providing clinical guidelines that incorporate the latest findings on brain-gut interaction, gut microbiota imbalance, and cognitive impairment, they have successfully translated research into tangible benefits for patients by integrating these discoveries into clinical practice, with patient health education as a crucial component. It brings a good resource for pelvic floor dysfunction patients.

3.3. Storytelling by patients and healthcare providers

Storytelling has been recognized as an effective method of patient health education. Allowing patients to share their experiences can positively impact attitudes, knowledge, behaviors, and outcomes related to health.¹⁷ Hearing personal stories can instill confidence in others facing similar challenges.

Healthcare providers can offer tailored evidence-based information and supporting evidence to address patients' concerns and enhance disease awareness. Considering the comprehensive nature of pelvic floor disorders, behavioral and lifestyle changes through educational and cognitive approaches are crucial for treatment outcomes and emotional well-being.

One approach to patient education is the use of video blogs or broadcast channels on social media platforms, providing easily accessible and accurate information for patients.

4. Therapeutic outcome and evaluation

Compared to other areas of medicine, treating pelvic floor disorders relies heavily on patient-reported symptoms, and frequently, the outcomes cannot be measured, compared, or quantified by objective tests or imaging. Usually, patient-reported outcome measures (PROMs) are valuable tools.¹⁸ utilized by clinicians and researchers to assess patients' symptoms and quality of life (QoL) in a standardized manner.

In 2020, the Pelvic Floor Disorders Consortium, a multidisciplinary group of providers generated the specific PROMs, known as IMPACT (Initial Measurement of Patient-Reported Pelvic Floor Complaints Tool), which can be utilized in various clinical settings, irrespective of the

specialist initially involved in the patient's care. IMPACT includes specific instruments for urinary incontinence, pelvic organ prolapse, bowel complaints (including fecal incontinence and constipation), disease-specific quality of life, and female sexual dysfunction.¹⁹

The achievement of IMPACT from multidisciplinary collaboration serves as a valuable measurable tool for pelvic floor integrative medicine clinical and research work. It not only facilitates the standardized collection of diverse pelvic floor symptoms during initial consultations but also aids in evaluating treatment effectiveness and assessing quality of life.

5. Expand the scope of integrative medicine

5.1. Potentials of acupuncture

In the clinical practice of pelvic floor integrative medicine in China, acupuncture as a specific treatment method has made significant progress. Clinical studies and randomized controlled trials targeting specific acupuncture points such as DU-20(Baihui), ST-25(Tianshu), BL-33(Zhongliao), BL-34(Xialiao), and BL-35(Huiyang) have demonstrated the multi-target and holistic regulatory effects on the central nervous system, enteric nervous system, sacral nerves, and pudendal nerve, highlighting its effectiveness and safety in treating refractory constipation,²⁰ urinary incontinence,²¹ pelvic pain²², and obstructive defecation disorders.³

These research findings provide a solid foundation for the application of acupuncture in pelvic floor integrative medicine, offering personalized treatment options for patients who have not responded well to conventional Western medicine and biofeedback therapy. Acupuncture holds great prospects in this field. The findings also highlighted the safety and economic profile as a non-invasive and well-tolerated option.

5.2. Potentials of telehealth

For patients, telehealth presents a promising solution to address the challenges faced by individuals with complex pelvic floor disorders in accessing specialized care. By leveraging these platforms, patients who encounter barriers to traditional healthcare institutions can now benefit from online consultations, remote monitoring, and personalized rehabilitation services, all from the convenience and comfort of their own homes. Research has confirmed that the quality of doctor-patient communication did not significantly differ between web-based and face-to-face consultations.²³ Telehealth has been shown to significantly improve urinary symptoms, pelvic floor muscle function, and quality of life.²⁴

For healthcare providers, training and shared decision-making are of paramount importance in effectively utilizing telehealth platforms and integrating the principles into their practice. Additionally, fostering a collaborative approach through shared decision-making between healthcare providers and patients holds significant promise in optimizing clinical outcomes for individuals with complex pelvic floor disorders.

Telehealth is still emerging, and more studies are needed to draw more conclusions. The recommendations of the governmental authorities, physical therapy councils, and corresponding associations of each country also need to be considered.²⁴

6. Conclusion

The integrative pelvic floor medicine model holds great potential for improving the care and outcomes of patients with pelvic floor disorders. By adopting a multidisciplinary and interdisciplinary approach, healthcare teams can collaborate effectively and develop personalized care plans tailored to the specific needs of each patient.

Patient-centered communication and education are crucial components of this model, PROMs enable evaluation of treatment effectiveness and quality of life.

To expand the scope of integrative medicine for pelvic floor disorders, acupuncture & Chinese medicine and telehealth are two promising avenues based on Chinese practice characteristics. Further research, collaboration, and guidelines are needed to promote the development and implementation of these strategies in clinical practice.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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