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Research Article

Anatomical Foundations of the Pelvic Floor and the Therapeutic Role of Kegel Exercises in the Management of Pelvic Floor Dysfunction: A Narrative Review

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ABSTRACT

The pelvic floor is like a strong layer of muscles and tissue that supports the base of the pelvis. It plays a big role in keeping us continent, supporting our pelvic organs, and helping us have normal sexual and bowel functions. But when this support system fails, it can lead to problems like urinary incontinence or pelvic organ prolapse. These conditions can really affect a person's quality of life, especially for women after childbirth, as they get older, or after pelvic surgery, and also for men after prostate surgery. Pelvic floor muscle training, also known as Kegel exercises, has been around since the 1940s and is still the most recommended non-surgical treatment for these problems. This training helps strengthen the muscles and improve bladder control. Pelvic floor muscle training focuses on squeezing and releasing muscles that control urine flow, which supports the urethra and helps prevent incontinence. Effective training enhances muscle strength, improves sexual function, and aids recovery after prostate surgery. Success relies on proper technique, consistent practice, and accurately targeting the correct muscles. Supervised training with biofeedback is more effective than unsupervised efforts. The benefits are clear: improved muscle strength, better urethral support, and enhanced continence outcomes. Even better, this type of training is low-cost and low-risk, making it a great option for people dealing with pelvic floor disorders. As long as the technique is right, and people stick to the program, Kegel exercises can make a big difference. Pelvic floor muscle training can effectively address incontinence and pelvic floor issues when taught and practiced correctly. By strengthening these muscles, individuals can regain control, confidence, and improve their quality of life. Success relies on proper technique, consistency, and accurately targeting the pelvic floor muscles. This method is beneficial for those facing pelvic floor disorders.

Keywords: Pelvic Floor, Kegel Exercise, Pelvic Floor Muscle Training, Urinary Incontinence, Pelvic Organ Prolapse.

INTRODUCTION

The pelvic floor is more than just a simple layer of muscle - it's a complex system made up of muscle, fascia, and ligaments that forms the base of the pelvic cavity. Its role is really important, as it needs to stay strong enough to keep the bladder, uterus, and rectum in place, while also being able to relax when needed, like when we need to perpform micturition, defecation, and child birth. This means the pelvic floor has to be able to do two things at once: provide constant support and also be able to release quickly when necessary. This makes it quite unique

compared to other muscle groups in the body, and it's also what makes it harder to rehabilitate - it's not just about getting stronger, but also about being able to control and coordinate the muscles properly. The pelvic floor is dynamic and layered, and its function is critical to our overall health and well-being. Pelvic floor problems are pretty common and can be a big deal. Lots of women experience urinary incontinence, which is when you leak urine without meaning to, at some point in their lives. This often happens when you cough, laugh, or exert yourself, and it's usually linked to weakness in the pelvic floor muscles [1]. Another issue that's fairly widespread is pelvic organ prolapse, where the bladder, uterus, or rectum slips out of place and into the vaginal canal. Depending on how you define and diagnose it, this can affect anywhere from 3% to 50% of women, with the higher end of that range being more likely in women who've had vaginal childbirth and have been examined by a doctor rather than just self-reporting [2,3]. Both of these conditions tend to get more common as women get older, and they're often linked to vaginal childbirth, which can put a lot of strain on the muscles and tissues that support the pelvic floor. Sometimes, this strain doesn't fully heal on its own, which can lead to problems down the line [4].

Men can also have problems with their pelvic floor, even though the issues they face are different from those of women. When men have surgery to remove their prostate, known as a radical prostatectomy, it can sometimes damage the muscles that help control urination. This can lead to stress incontinence, a condition where men leak urine when they cough, sneeze, or lift heavy things. Unfortunately, this problem can last for months after the surgery [5,6].

Against this backdrop, conservative, non-surgical management has become the preferred starting point for both sexes. Pelvic floor muscle training — popularly known by the name of the American gynaecologist who first formalised it, Arnold Kegel — sits at the centre of that conservative approach [7]. It is cheap, it carries essentially no risk when taught correctly, and unlike surgery or pharmacotherapy it can be initiated before a problem becomes severe. Yet despite more than seventy-five years of clinical use, the exercise is still frequently performed incorrectly, poorly supervised, or abandoned before any benefit is felt, which raises a fair question: what does the current evidence actually say about how well Kegel exercises work, for whom, and under what conditions? This review aims to provide a clear and helpful answer by combining what we know about the anatomy of the pelvic floor with the latest clinical evidence on how well Kegel exercises work, to give a comprehensive and current understanding of the topic.

Objectives

The specific objectives of this narrative review are to:

1. Review pelvic floor anatomy and the rationale behind Kegel exercises.
2. Assess clinical evidence on their effectiveness across different populations.
3. Identify success/failure factors and gaps for future research.

MATERIALS AND METHODS

This study presents a narrative literature review that integrates various perspectives on pelvic floor dysfunction, focusing on the anatomical, physiological, clinical, and rehabilitation aspects. It discusses the structural organization and function of pelvic floor muscles, including their role in preventing incontinence and managing urine control. The review highlights Kegel exercises' therapeutic role, examining their mechanisms, clinical relevance, and contributions to symptom improvement and functional recovery through targeted muscle training.

Data Sources

Literature was identified through PubMed, Scopus, and Google Scholar, supplemented by manual screening of reference lists in relevant systematic reviews. Search terms combined "pelvic floor," "Kegel exercise," "pelvic floor muscle training," "urinary incontinence," "pelvic organ prolapse," "biofeedback," and related terms.

Inclusion Criteria

- Peer-reviewed studies addressing pelvic floor anatomy, physiology, or pelvic floor muscle training;
- Randomised controlled trials, systematic reviews, and meta-analyses evaluating Kegel exercise or pelvic floor muscle training interventions;
- Studies addressing urinary incontinence, pelvic organ prolapse, sexual function, or post-prostatectomy incontinence;
- Articles published in English.

Exclusion Criteria

- Non-peer-reviewed sources, conference abstracts without full data, and duplicate publications;
- Studies lacking clear methodological reporting;
- Case reports with fewer than five participants.

Data Synthesis

Selected literature was grouped thematically into four broad categories: pelvic floor anatomy, mechanisms of Kegel exercise, clinical effectiveness across specific populations, and factors influencing outcomes. Findings were synthesised narratively, with an emphasis on identifying areas of consistency and disagreement across studies rather than on statistical pooling.

Anatomical and Functional Basis of the Pelvic Floor

Boundaries and Structural Components

The pelvic floor is a region between an imaginary line drawn between the pubic bone and the sacrum at the level of the first sacral segment and the sitting bones and tailbone at the bottom [8]. The pelvic floor is a complex anatomical structure consisting of muscles, fascia, and connective tissues. Pelvic floor muscles are difficult to characterize since the organization and function depend on developmental patterns, connective tissue quality, and physiological loads related to body mechanics, breathing, and intra-abdominal pressure [9]. Pelvic floor function is therefore determined by developmental and connective tissue factors as well as mechanical loads, which are all variables that contribute to our understanding of pelvic floor muscle physiology. The pelvic diaphragm is the muscular-fascial dome formed by the muscles mentioned above and is critical in supporting the pelvic organs and controlling pelvic floor function. A comprehensive understanding of this structure's anatomy and physiological mechanisms is essential for researchers to gain insight into the relationships within this region and develop treatments for urogenital disorders.

The Levator Ani Complex

The levator ani complex is the pelvic floor's primary musculature, with the levator ani muscle being divided into three parts: puborectalis, pubococcygeus, and iliococcygeus, with the help of the coccygeus muscle, forming the levator ani. The puborectalis encircles the anorectal junction in a U-shape and is primarily responsible for the anorectal angle, while the pubococcygeus and iliococcygeus provide a broad supportive cuff to the pelvic organs [4]. The findings were based on the dissection of corpses and MRI scans of the pelvic region. Studies have shown that individual levator ani muscle parts have different origin/insertion patterns, which may explain why a simple squeezing movement rarely results in optimal pelvic floor contraction [4]. According to scientific studies, the levator ani muscle consists of two parts: the crossed component, which spans the pelvic floor and closes the urogenital and anorectal canals, and the vertical component, which surrounds the urethra, vagina, and rectum in a cylinder. Therefore, injury to the pelvic floor muscles might lead to dysfunction of the pelvic floor muscles, resulting in fecal and urinary incontinence, particularly after childbirth when the muscles are torn [3,4].

Neuromuscular and Fascial Support Systems

The pelvic floor is not only a muscular structure; the endopelvic fascia and its ligamentous extensions play a significant role in providing passive suspension. This mechanism works in conjunction with the active pelvic floor muscles to provide the necessary support [9]. The endopelvic fascia and pelvic floor muscles form a functional unit that supports and stabilizes the pelvic organs while controlling micturition, evacuation, and sexual function. Moreover, the ligaments that span the pelvic floor in conjunction with the vaginal wall are critical elements for supporting the pelvic organs. This physiological fact is essential for the pelvic floor rehabilitation strategy, implying that targeted muscle training is ineffective for treating connective tissue damage. However, it should be mentioned that muscular activity is vital for the pelvic floor since it plays a key role in coordinating pelvic floor function, especially during pregnancy, childbirth, and postpartum [5]. To summarize, the pelvic floor is a complicated anatomical structure that requires the coordinated activity of several tissues to maintain functionality. Pelvic floor muscles are essential in the process, but they cannot provide adequate support without ligaments, endopelvic fascia, and other structures. This is why studying anatomy is important for understanding the basic

principles of pelvic floor relaxation and the development of female urinary incontinence. In other words, the loss of function of any particular component of the pelvic floor causes extensive physiological changes throughout the body. Injuries to connective tissues, for example, are frequently the underlying cause of pelvic floor dysfunction. Such damage cannot be repaired via pelvic floor muscle training, though; rather, it requires a more comprehensive therapy. Finally, it is worth noting that while targeted physical therapy is not an effective treatment option for the majority of pelvic floor problems, it is a critical component of any treatment plan.

The International Continence Society has established a standard terminology for describing the anatomy and pathology of the lower urinary tract [1], for classifying pelvic floor dysfunction and prolapse [3,11,12], and for classifying the relevant disorders [12]. This standard terminology was developed jointly with the International Urogynecological Association. The clinical investigations discussed in this chapter are based on this classification system; the POP-Q staging system, in particular, was used to assess prolapse.

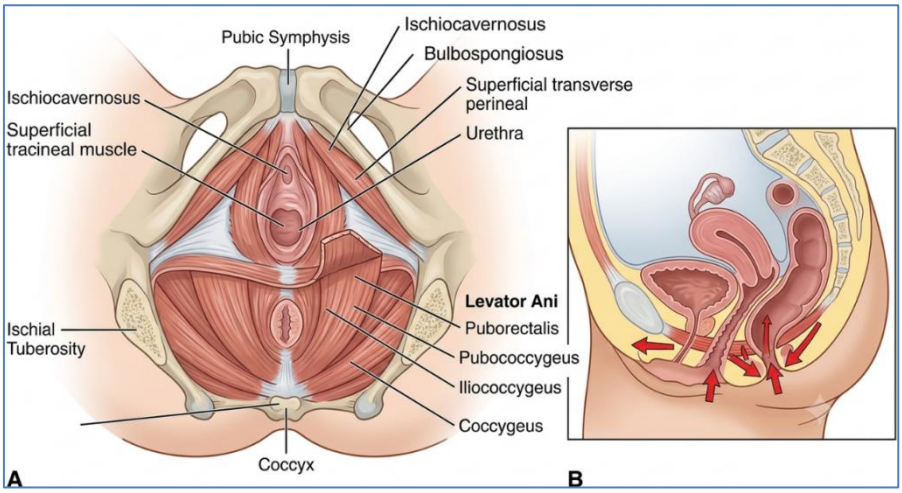

Figure 1. Anatomical Architecture and Biomechanical Support of the Female Pelvic Floor. (A) Inferior (Perineal) View (B) Midsagittal Cross-Section

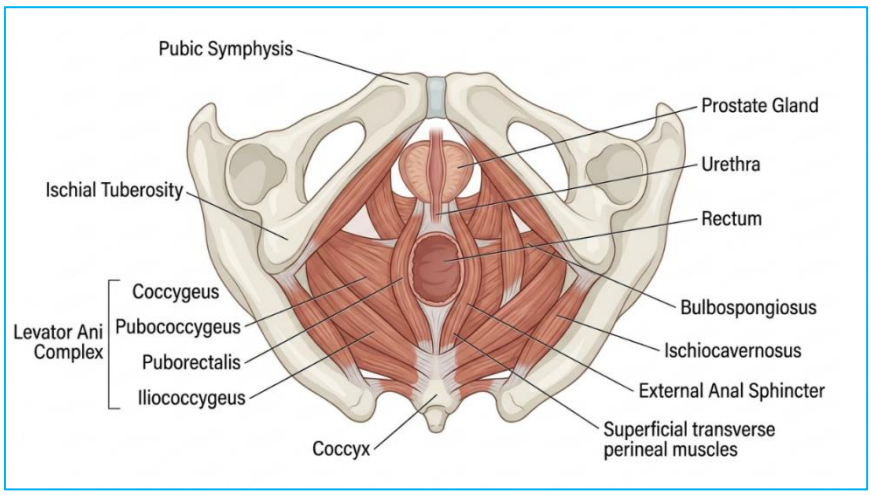

Figure 2. Anatomical Architecture and Biomechanical Support of the Male Pelvic Floor.

Kegel Exercise: Origin, Principles, and Technique

Historical Background

Kegel exercises are initially introduced by a US gynaecologist Arnold H. Kegel, who in 1948 developed a program for restoring the muscles' function that had been injured during pregnancy [7]. The principle is simple: the targeted exercise of these muscles allows to strengthen them and return their function. It is noteworthy that Kegel's training is the first pelvic floor muscle training that actually

worked. For this purpose, Kegel also developed a special device called a perineometer that measures the pressure in the vagina to indicate the degree to which the muscle is strained. This allows determining the correct technique of exercises, both for the doctor and the patient.

Mechanism of Action

Physiologically, pelvic floor muscle training is similar to any other form of muscle strengthening; however, it is more diverse since it includes the mixed-type muscle fibers. The levator ani consists of two main types of muscle fibers, including slow-twitch and fast-twitch fibers. The former plays an important role in the tonic activity of the pelvic floor to ensure continence, while the latter are responsible for the phasic contractions necessary to resist large increases in intra-abdominal pressure, such as during coughing or sneezing [10]. To achieve the best results, a person needs to target both fast and slow fibers through the appropriate exercises. To strengthen the slow fibers, one needs to induce prolonged contractions to increase the resistance of the muscles. At the same time, short contractions allow recruit more motor units and strengthen the fast ones, thus improving muscle response. In addition to high intensity, pelvic floor muscle training also requires a longer duration to achieve optimal results. The increase in the size and strength of the pelvic floor muscles will ensure the improvement of urethral pressure, the lifting of the urethra, and the support of other pelvic organs, thereby contributing to optimal continence and organ function [10,13]. Therefore, regular Kegel exercises help to effectively improve pelvic floor function and achieve the desired results. Exercises should target both slow and fast muscle fibers, thus improving the pelvic floor function.

Standard Technique and Progression

In order to perform these exercises properly, it is necessary to know how to correctly locate the pelvic floor muscles and be able to contract them. One should imagine trying to stop the flow of urine or prevent yourself from passing gas, but without actually doing so. It is also possible to start exercising in a lying position and then try to do the same movements while sitting or standing, or when lifting weights. However, many people make a mistake and squeeze their thighs or stomach when they should be contracting their pelvic floor muscles. Therefore, it is always recommended to consult specialists and receive individual advice and recommendations, while biofeedback is a useful tool to help determine whether the correct muscles are being exercised [14]. A significant challenge for pelvic floor muscle training is that patients often have difficulty performing the necessary exercises even when verbal instructions are given to them. In particular, a large number of patients tend to actively strain their abdominal, anal, or thigh muscles or use the Valsalva maneuver to achieve the desired effect, which should not be done. Therefore, individual instruction and the use of biofeedback or digital palpation are necessary to determine the correct exercises to be performed at home.

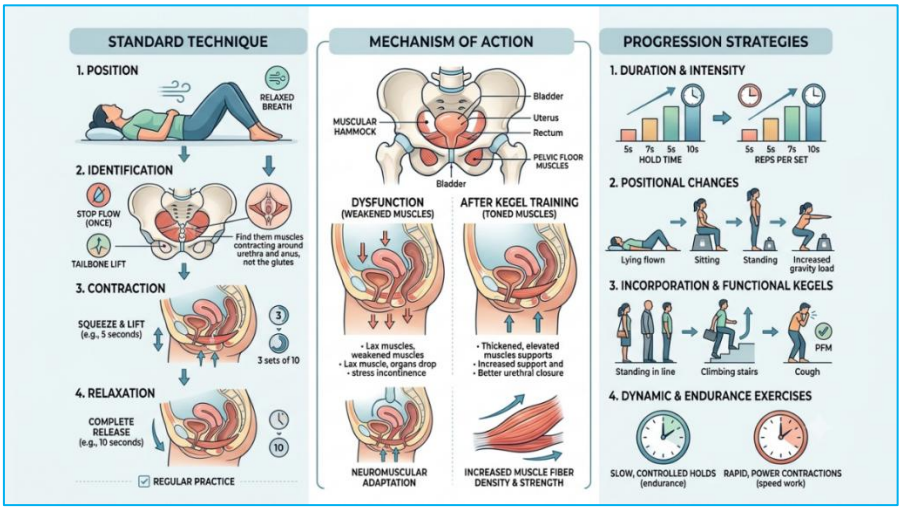

Figure 3. Comprehensive Overview of Pelvic Floor Muscle Training (Kegel Exercises): Standard Technique, Mechanisms of Action, and Progression Strategies. [Illustration Generated Using Google Gemini AI]

Clinical Evidence of Effectiveness

Urinary Incontinence in Women

Kegel exercises have been proven to be significantly beneficial for women suffering from urinary incontinence – stress, urgency and mixed – based on a recent review of 63 studies and almost 5,000 participants, which concluded that pelvic floor muscle training made a notable impact regardless of the approach used. Updated in 2024, it showed that women who engaged in the exercises experienced fewer leaks and were more satisfied with the results compared to those who did not [15]. A 2018 review comparing those who underwent pelvic floor muscle training with those who did not found that those who did had a higher likelihood of improvement in terms of symptoms and satisfaction, with fewer leaks and greater satisfaction overall [13]. It is not only the reduction in leaks that matters, but the overall improvement in the quality of life that women undergo when they engage in these exercises [16]. A review published in 2023 found that structured pelvic floor muscle training led to moderate improvements in overall health and social functioning among women [16].

Kegel exercises provide a simple and effective solution for women seeking to manage symptoms of urinary incontinence and improve their quality of life. Through regular practice, women can experience the benefits of reduced leaks, increased confidence and an active lifestyle. Different approaches to pelvic floor muscle training exist, allowing women to work with their health care provider to find the best approach for their needs. With the right training and support, women can overcome urinary incontinence and achieve improved health and happiness.

Pregnancy and the Postpartum Period

Pregnancy and vaginal delivery put significant strain on the pelvic floor, and researchers have looked at the effectiveness of pre and postnatal training programs as a measure to prevent problems. A study that pooled the results of many others found that women who engaged in pelvic floor muscle training while pregnant were far less likely to experience incontinence later during their pregnancy compared to those who did not engage [17]. A huge study in Norway found that a structured exercise program that included pelvic floor training reduced the risk of urinary and anal incontinence in pregnant women [18]. However, a follow up seven years later found that the benefits of the training did not last the entire period, which highlights the need for more research on the long term benefits of such training [19].

Research into the efficacy of pelvic floor muscle training before and after birth is still in its early stages, with preliminary findings showing promising reduction in incontinence problems during pregnancy. Women who are pregnant or planning to conceive should work with their health care provider to explore this proactive approach to safeguarding pelvic health and mitigating incontinence problems. Further research is needed to fully understand the benefits of this type of training.

Men and Post-Prostatectomy Incontinence

Pelvic floor muscle training is particularly important for men undergoing radical prostatectomy, as it can take a while to regain bladder control after the procedure, and the impact varies from person to person [5]. Research into the effectiveness of different forms of training has shown that men who received guidance from a physiotherapist in performing the exercises were able to recover faster and more fully than those who simply followed instructions [6]. A more recent study that pooled the data from many studies showed the same result, that supervised exercise programs led to better outcomes for continence after radical prostatectomy than unsupervised ones [20]. There are specific protocols, such as the "4-3-2" method, that have been developed to help standardize the training process and make it more effective. This method involves a certain number of rapid and slow contractions per session and is specifically targeted towards men who have undergone radical prostatectomy [14].

Pelvic Organ Prolapse

The efficacy of pelvic floor muscle training in the management of pelvic organ prolapse is far less clear-cut than in the management of urinary incontinence. However, the fact remains that the condition is highly prevalent, particularly among older women who have had children [2,3], and as the world's population ages, it is expected to see an increase in the incidence of prolapse [4]. To assess the severity of prolapse, doctors use a POP-Q (Pelvic Organ Prolapse Quantification) system, which enables them to compare the situation across different populations [3]. However, when comparing results from different countries, including China, there is significant

variability depending on the survey method used [21,22]. Some surveys that use self-reported measures might find only a minority of people are affected by prolapse compared to a clinical examination, which would produce significantly higher rates. When it comes to the management of pelvic organ prolapse through pelvic floor muscle training, the evidence shows that it has had the greatest impact on those in the early stages of the condition [23].

Sexual Function

A surprising benefit of pelvic floor muscle training is its positive impact on sexual function. Researchers observed at 21 studies and found that this type of training can have a significant impact on sexual function, including increasing arousal [24]. One study found that postmenopausal women who engaged in pelvic floor muscle training saw improvement in their sex lives due to the muscles being strengthened and helping with vaginal elongation and narrowing during arousal [25]. Training is effective for women with a range of health concerns, including incontinence issues related to pregnancy, pelvic conditions, overactive bladder and multiple sclerosis [26,27]. The evidence is still emerging, but it is clear that pelvic floor muscle training is worth exploring for women who are wanting to improve their sexual health. More research is needed to explore the mechanism by which this improvement occurs; however, women with a range of health concerns have reported positive effects, suggesting that this type of training can be beneficial for many people alike.

Role of Biofeedback and Electrostimulation

Across all groups, a common theme is that the addition of biofeedback or electrical stimulation to standard pelvic floor muscle training leads to significantly improved outcomes, due to the issue of incorrect muscle use by the patient. Studies have shown that the addition of electromyographic biofeedback to a standard training program can improve the outcomes for people with stress urinary incontinence and other pelvic floor conditions. One review that pooled the results on many studies found that biofeedback was beneficial for stress urinary incontinence and a broader range of pelvic floor issues when added to standard training [28]. An earlier meta-analysis focused on stress incontinence and arrived at a similar conclusion, as did a large trial with many participants [29,30]. Similar benefits have been observed when using biofeedback in combination with electrical stimulation in women with a range of stress incontinence [31]. Biofeedback not only increases the strength of muscle contractions, but also the harmony with which the pelvic floor muscles work with other muscles in the body [32]. On the other hand, when it comes to overactive bladder, the evidence is mixed. A review found that electrical stimulation was more helpful than biofeedback-assisted training for this particular condition [33]. This highlights that pelvic floor dysfunction is not one size fits all, and what works best depends on the specific diagnosis.

Factors Influencing Therapeutic Outcomes

In aggregate, the literature reviewed above points toward a common set of variables that differentiate successful from disappointing pelvic floor muscle training:

- **Correct muscle isolation**: a large proportion of first time trainees contract the wrong muscle group or perform a Valsalva manoeuvre unknowingly which can be corrected by biofeedback or manual/digital assessment [28,29]
- **Supervision and instruction quality**: physiotherapist-guided programmes consistently outperform written or verbal instruction alone in both women and men [6,15,20]
- **Adherence and consistency**: benefits depend on sustained practice over weeks to months rather than short bursts of effort and adherence tends to drop off over time without continued follow up or reminders
- **Timing relative to injury or surgery**: earlier initiation, for example soon after catheter removal following prostatectomy is generally associated with faster continence recovery [6]
- **Baseline muscle condition, age and comorbidity**: older people and those with more severe baseline weakness typically require longer sessions to achieve comparable gains
- **Use of biofeedback or electrostimulation**: as an adjunct, particularly where technique is difficult to confirm by verbal cueing alone [30,31]

In real life applications, these factors do not act in isolation – the most effective programs are those that make use of a combination of several of them. This means starting early,

providing personalized and supervised guidance, using biofeedback where possible and creating a tiered approach that progresses from simple muscle contractions to more complex, weight-bearing activities.

DISCUSSION

The evidence reviewed here supports a fair overall picture: Kegel exercise, as a structured pelvic floor muscle training, is an effective first-line intervention with low risk for stress and mixed urinary incontinence in women and also for post-prostatectomy incontinence in men, growing rapidly as an intervention for various aspects of sexual function, whereas its role in reversal of pelvic organ prolapse is limited and framed as a management option not as correction. Of particular interest are the outcomes related to the benefits resulting from appropriate training and practicing of the exercise.

When patients are shown how to perform a simple muscular contraction at an efficient level and practice it regularly with a supervisor, the results are significantly better compared to being instructed briefly and practicing on their own at home. This is expected when patients see the learning process: if they are not able to feel or see what they are supposed to do, it is difficult for them to achieve it themselves. Moreover, in the case of pelvic floor exercises, it is challenging for patients to see if they are doing the exercise correctly. Hence, various methods, such as the use of biofeedback devices or vaginal or anal manometry, can be extremely beneficial by providing the patient with information on their performance, hence assisting them in achieving an efficient pelvic floor exercise. Similarly, it is like the difference between teaching a patient to do an exercise at home without a trainer or having a trainer show them how to do the exercise and then practicing it at home. Patients will see a difference in the results when their trainer helps them to achieve the necessary performance levels.

With regard to the muscle training, it should also be noted that it is not as straightforward as following a basic set of instructions. The levator ani muscle is complicated: its different functionally components can have various roles and, together with the connective tissue, are paramount in the correct functioning of the pelvic floor. Therefore, a simple approach of focusing on a single component to the detriment of the others or neglecting the role of breathing and posture will not yield satisfactory results. A better approach is to follow the research-based and well-established programs, such as those for women with mild defects, who are likely to witness significant improvements due to training. At the same time, women with severe prolapse and, for example, levator avulsion should be aware of their limitations and not expect dramatic outcomes from pelvic floor training since it would not be able to address the damage to the connective tissue and fascia. The point is to understand the different components of the pelvic floor, learn their functions, and consider them holistically in order to maximize the benefits of pelvic floor muscle training. In turn, individual variations in anatomy and function should be considered in order to maximize the benefits for each patient by choosing the right mix of approaches, such as pelvic floor muscle training combined with other interventions, to maximize the benefits for each patient and ensure their wellbeing.

With regard to the pelvic floor exercises, there are two critical caveats that should be considered. The first one concerns the fact that it is not enough to instruct the patient to perform the exercises: they have to be taught by someone qualified to provide the supervision and, after a certain level of proficiency has been achieved, the patients can practice at home on their own. The second point is the matter of the expectations: in most cases, they should be adjusted downwards since, for the majority of patients, pelvic floor muscle training is not an intervention to restore normal function but an attempt to prevent the worsening of the condition. It is important to take this into consideration to avoid disappointment and set realistic goals for pelvic floor muscle training.

Limitations of the Review

The scope of this narrative review is to present key methodological considerations for interpreting findings related to pelvic floor muscle training. It synthesizes the evidence found but does not necessarily pursue exhaustive publication coverage or uniform bias assessment. A vast amount of literature explores the application of Kegel exercises in a variety of settings but with significantly varying protocols, which complicates the matter: in particular, the evidence base is stronger for women than for men, addressing an apparent gap in the literature of male pelvic floor dysfunction besides prostate

surgery. More structured studies on a variety of male populations with uniform protocols and outcome measurements are needed to address this gap and facilitate improvement in pelvic floor rehabilitation for both genders.

Despite the limitations, this narrative review provides a clinically relevant synthesis of anatomical and therapeutic evidence and identifies areas where additional high-quality research may facilitate the application of Kegel exercise for the management of pelvic floor dysfunction.

CONCLUSION

The pelvic floor muscle training has proven itself to be a useful intervention with a long-standing history of helping patients achieve better bladder control, pelvic organ prolapse, and improved sexual function. The idea behind it is simple: by performing specific exercises, one can strengthen the muscles in the pelvic floor, which, in turn, can have a variety of benefits for the person. Based on the anatomical structure of the pelvic floor, it is evident that it is not a single strip of muscle but a complex of different tissues working together for the proper functioning of the system. Therefore, it is not the intervention itself but the combination of proper instruction, regular practice, and the adjustment of expectations, particularly for those with injuries or damage to the pelvic floor, that can maximize the benefits for the patients. Pelvic floor muscle training thus can be optimized by standardizing the interventions, following the patients for a longer period of time to witness the improvements, and conducting further research into the benefits for men and women not related to pregnancy. This will allow addressing the gaps in literature and providing the patients with the best possible care, maximizing the benefits of this simple exercise, similar to clinical trials.

Conflict of Interest

The authors declare that there are no conflicts of interest to disclose in relation to the publication of this manuscript.

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Ethical Considerations

As this is a literature-based study, no human or animal subjects were involved, and thus no ethical clearance was required. However, due academic integrity was maintained through proper citation and referencing practices.

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