

普拉提联合八段锦训练对产后女性轻中度压力性尿失禁的干预研究

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摘要: 目的: 中国妇女儿童发展纲要(2011-2020年), 呼吁社会各界人士需尊重妇女、保障妇女享有基本医疗卫生服务、生命质量和健康水平。随着我国三胎政策开放和人口老龄化的到来, 对我国经济带来巨大影响。压力性尿失禁发病率逐年上升, 严重的影响了女性的生活质量。余昆(2018)指出成年女性尿失禁的发病率为 31.3%, 且患病率随年龄增长而增加, 压力性尿失禁多发于中老年女性和产后女性, 因生产之后造成盆底肌的损伤。国内外学者研究发现, 轻中度患者通过运动干预可改善压力性尿失禁, 从而提高女性生活质量, 重度患者通过手术或者服用激素药物进行干预, 仅通过运动干预改善效果不明显。以“盆底肌”为主题和关键字对 2000-2021 年的期刊文献进行搜索, 近年来成直线上升趋势。同时, 对 1980-2021 年的期刊文献进行搜索发现, 体育类期刊文献仅 89 篇, 占比为 1.09%, 且大多数学者研究聚焦在医学上的康复, 关于体育干预的研究具有一定提升空间。目前针对轻中度压力性尿失禁的康复有以下形式: 生物反馈电刺激、激光照射、凯格尔运动、中医穴位按摩、芭蕾形体训练、瑜伽、普拉提、健身气功等。李俭莉等(2013)指出大舞摆臀势练习配合提肛式逆腹式呼吸, 对女性压力性尿失禁症状具有一定的康复作用。钟木英(2018)指出八段锦在改善产后女性压力性尿失禁症状具有一定疗效, 但是样本量少, 需要进一步对这项康复训练进行探讨探究。蒋莉(2019)指出盆底功能训练联合艾灸关元穴能够改善女性压力性尿失禁, 证明我国中医疗法对盆底肌松弛症状能产生积极的影响, 以上学者研究成果为普拉提联合八段锦训练方案创编提供研究思路。普拉提是一项强调肌肉控制的运动, 练习普拉提不仅能锻炼到大肌肉群, 而且深层的小肌肉群也能被激活。传统八段锦养生疗法具有调理气血、补肾养肝的作用, 练习八段锦不需要特定的器械、简单易学、康复效果良好, 做为一种治疗手段广泛应用在慢性疾病的康复上。而普拉提的训练动作大多都是仰卧、侧卧、俯卧的体位, 站立的体位较少。因此采用普拉提结合八段锦的训练方案, 可高效及全方位锻炼到盆底肌。根据产后女性盆底肌的特点, 对产后 30 名女性进行为期 12 周的普拉提、中国健身气功八段锦相结合的训练方案, 以私教一对

一的形式，通过观察干预后盆底肌肌力指标变化，旨在探讨普拉提联合八段锦锻炼对产后女性盆底肌肌力的影响，为今后此类实验的训练方案提供理论依据。**方法：**文献资料法、专家访谈法、实验法、问卷调查法、数理统计法。在广州市优普拉提工作室招募 30 名产后女性作为实验对象，要求受试者没有不明原因的阴道出血、急性阴道炎、恶性肿瘤、肢体残疾、精神类疾病，并且自愿参与训练。随机将 30 名产后女性分为 A、B、C 三组，每组 10 人。对照 A 组进行普拉提训练，对照 B 组进行八段锦训练，观察 C 组进行普拉提联合八段锦训练。三组每次练习一小时，一周练习 3 次，A、C 组运动心率均控制在 50%-60% HRmax 范围内，确保中低强度的运动；B 组保持低强度的运动。三组研究对象使用盆底肌训练仪进行评估，各在实验开始前一天、实验结束当天、实验结束后四周的下午 2 点钟到医院进行盆底肌肌力评估，由医院专业人员进行操作。A 组产后女性：每次热身 5 分钟，普拉提产后动作练习 45 分钟，10 分钟拉伸放松。B 组产后女性：使用国家体育总局推广的八段锦口令版，每天练习八段锦 1 小时/课时，一课时练习 4 遍。练习 2 遍，休息 5 分钟，再进行下一轮。C 组产后女性：12 周三个阶段训练方案流程：手法松解、手法激活、动态拉伸、普拉提训练、八段锦练习。普拉提产后训练动作设计：前 1-3 个动作，动态激活盆底肌。后 4-21 个动作，强化盆底肌、臀肌、腹肌力量与耐力，提高关节活动度、身体协调性，灵活脊柱。每次训练流程：热身 5 分钟，普拉提练习 43 分钟，12 分钟八段锦训练。由专业教练进行一对一的指导。（1）测试指标：盆底肌肌力（2）测试仪器：盆底肌训练仪（常州瑞海英诺医疗科技有限公司）（3）测试方法：受试者排空大小便，平躺在床上采取膀胱截石位，然后把仪器探头套上避孕套，放入阴道内。之后再根据医生的指令收缩放松盆底肌，最后得出结果。通过对 3 组产后女性进行调查，调查内容为 ICI-Q-SF 简表评分表，利用问卷星小程序发放，发放对象为 30 名研究对象，一共发放 3 次问卷，分别为：实验开始前 1 天、实验后、实验后四周。**结果：**1. 三组产后女性实验后 ICI-Q-SF 评分多重比较：实验后与实验结束后四周，A、C 组间无差异（ $P>0.05$ ）。A、C 组与 B 组间 P 值均小于 0.01，具有统计学意义。2. Anova 分析，实验前三组产后女性 ICI-Q-SF 评分均大于 0.05，具有研究意义。实验后与实验后一个月三组产后女性 ICI-Q-SF 评分均比实验前高，A 和 C 组实验后与实验后四周评分均比 B 组实验后及实验后四周评分高，观察 C 组实验后与实验后四周评分均比 A 组实验后及实验后四周评分高，A 和 C 组 P 值均小于 0.01，具有非常显著的差异。3. 三组产后女性实验后盆底肌肌力多重比较：实验后与实验结束后四周，A 与 C 组间无差异（ $P>0.05$ ）。A、C 组与 B 组间 P 值均小于 0.01，具有统计学意

义。4. Anova 分析, 实验前三组产后女性盆底肌肌力均大于 0.05, 具有研究意义。实验后与实验后四周三组产后女性盆底肌肌力值均比实验前高, A 和 C 组实验后与实验后四周盆底肌肌力值均比 B 组高, C 组实验后与实验后四周盆底肌肌力值均比 A 组高。**结论:** 实验的三个训练方案均能改善产后女性压力性尿失禁的症状, 在一定程度上可以提高盆底肌肌力, 普拉提较八段锦训练效果好, 而普拉提联合八段锦训练效果最佳。在今后的私人教练培训过程中, 应该注重中西结合, 多元化、个性化和精细化, 提升教练的专业素质水平, 在三胎全面开放的今天, 科学的指导产后妇女进行康复运动。同时, 社会和家庭也要重视和加强产后妇女的认知水平, 使其意识到盆底肌修复的重要性。最后, 医院要加大与健身俱乐部、工作室的合作, 根据客户的需求, 提供高质量的私人订制服务, 确保产妇能够得到针对性的治疗和康复。因实验对象的特殊性, 本次实验的样本量较少, 这是此次实验存在的局限性。

关键词: 普拉提; 八段锦; 产后女性; 压力性尿失禁

Intervention study of Pilates combined with Baduanjin training on postpartum women with mild to moderate stress urinary incontinence

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Abstract: Objective: Outline for the Development of Women and Children in China (2011-2020), calling on people from all walks of life to respect women and ensure women's access to basic medical and health services, life quality and health level. With the opening of China's three-child policy and the arrival of the aging population, it has a huge impact on China's economy. The incidence of stress urinary incontinence is increasing year by year, which seriously affects the quality of life of women. Kun Yu (2018) pointed out that the incidence of urinary incontinence in adult women is 31.3%, and the prevalence increases with age. Stress urinary incontinence is more common in middle-aged and elderly women and postpartum women, which causes pelvic floor muscle injury after childbirth. Studies by scholars at home and abroad have found that exercise intervention can improve stress urinary incontinence in mild and moderate patients, thus improving the quality of life of women. In severe patients, intervention by surgery or taking

hormone drugs has no obvious improvement effect only through exercise intervention. Periodic literature searches with "pelvic floor muscles" as the theme and keywords from 2000 to 2021 have shown a linear upward trend in recent years. At the same time, a search of journal literature from 1980 to 2021 found that only 89 articles were published in sports journals, accounting for 1.09%. Moreover, most scholars' studies focused on medical rehabilitation, and there was certain room for improvement in the study of sports intervention. At present, the rehabilitation of mild to moderate stress urinary inence has the following forms: biofeedback electrical stimulation, laser irradiation, Kegel exercise, Chinese acupuncture point massage, ballet body training, yoga, Pilates, fitness Qigong and so on. Jianli Li (2013) pointed out that the practice of big dance hip swing combined with retroabdominal breathing of levator anus had a certain rehabilitation effect on the symptoms of stress urinary incontinence in women. Muying Zhong (2018) pointed out that Baduanjin had certain efficacy in improving postpartum stress urinary incontinence symptoms in women, but the sample size was small, and further exploration of this rehabilitation training was needed. Jiang Li (2019) pointed out that pelvic floor function training combined with moxibustion at Guanyuan acupoint can improve women's stress urinary incontinence, and proved that Chinese traditional medicine therapy can have a positive impact on pelvic floor muscle relaxation symptoms. The above research results of scholars provide research ideas for the creation of Pilates combined with Baduanjin training program. Pilates is an exercise that emphasizes muscle control. Practicing Pilates not only engages the large muscle groups, but also activates the deep smaller muscle groups. The traditional Baduanjin regimen has the function of regulating Qi and blood and tonifying kidney nourishing the liver. The practice of Baduanjin does not need specific equipment, is simple and easy to learn, and has good rehabilitation effect. As a treatment method, Baduanjin is widely used in the rehabilitation of chronic diseases. Pilates, on the other hand, involves lying on your back, on your side, or on your stomach, with fewer standing positions. Therefore, the use of Pilates combined with the training program of Baduan Kam, can be highly efficient and all-round exercise to the pelvic floor muscles. According to the characteristics of postpartum women pelvic floor muscles in women with postpartum 30 12-week pilates, Chinese health qigong Baduanjin training scheme of combining, in the form of personal training one to one, through the observation after the intervention of pelvic floor muscle strength index changes, aims to explore pilates joint

eight brocade of female postpartum pelvic floor muscle exercise effect, which provides the theoretical basis for the training of such experimental plan. **Methods:** Literature, expert interview, experiment, questionnaire and mathematical statistics were used. Thirty postpartum women were recruited as experimental subjects in Guangzhou UPilates Studio. The subjects were required to have no unexplained vaginal bleeding, acute vaginitis, malignant tumors, physical disabilities and mental diseases, and to participate in the training voluntarily. Thirty postpartum women were randomly divided into group A, B and C, with 10 in each group. Control group A received Pilates training, control group B received Baduanjin training, observation group C received Pilates combined with Baduanjin training. The three groups practiced for one hour each time, three times a week. The heart rate of group A and group C was controlled within the range of 50%-60% HRmax to ensure moderate and low intensity exercise. Group B maintained low intensity exercise. The subjects of the three groups were evaluated by using pelvic floor muscle training instrument. They went to the hospital for pelvic floor muscle strength assessment one day before the start of the experiment, the day after the end of the experiment, and four weeks after the end of the experiment at 2 o'clock in the afternoon, and were operated by professionals in the hospital. Group A postpartum women: warm up for 5 minutes each time, Pilates postpartum movement exercises for 45 minutes, 10 minutes of stretching and relaxation. Group B: Postpartum women: Use Baduan Jin password version promoted by General Administration of Sport of China, practice Baduan Jin for 1 hour/class hour every day, practice for 4 times per class hour. Practice twice, rest for 5 minutes, and then proceed to the next round. Postpartum women in group C: 12-week three-stage training program process: manipulation release, manipulation activation, dynamic stretching, Pilates training, and Baduanjin exercise. Postpartum Pilates training movement design: the first 1-3 movements, dynamic activation of pelvic floor muscles. The last 4-21 movements strengthen the strength and endurance of pelvic floor muscles, gluteal muscles and abdominal muscles, improve the range of motion, physical coordination, and flexible spine. Each training process: warm up for 5 minutes, Pilates exercises for 43 minutes, 12 minutes of 8 Kam training. One-on-one instruction by a professional coach. (1) Test indicators: pelvic floor muscle strength. (2) Testing instrument: pelvic floor muscle training instrument (Changzhou Ruihai Yingnuo Medical Technology Co., Ltd.). (3) Test method: the subjects emptied feces and urine, lay flat on the bed to take the bladder

lithotomy position, and then put the probe into the vagina with a condom. Then according to the doctor's instructions to contract and relax the pelvic floor muscles, the final result. Three groups of postpartum women were investigated. The content of the survey was ICI-Q-SF short form rating scale, which was distributed by using the small program of questionnaire. Thirty subjects were distributed three times: 1 day before the experiment, after the experiment, and 4 weeks after the experiment. **Results:** 1. Multiple comparison of ICI-Q-SF scores of postpartum women in the three groups after the experiment: there was no difference between group A and group C after the experiment and four weeks after the experiment ($P>0.05$). P values between groups A, C and B were all less than 0.01, which was statistically significant. 2. According to ANOVA analysis, the ICI-Q-SF scores of postpartum women in the first three groups were all greater than 0.05, which was of research significance. After the experiment with the experimental one month after three sets of postpartum women ICI - Q - SF, scores are higher than before the trial, A and group C after the experiment and experimental around scores than group B after 4 weeks after experiment and after experiment score is high, the observation group C with 4 weeks after experiment after experiment score more than 4 weeks after experiment and after experiment group A high score, P values A and C group were less than 0.01, has A very significant difference. 3. Multiple comparison of pelvic floor muscle strength among the three groups after the experiment: there was no difference between group A and group C after the experiment and four weeks after the end of the experiment ($P>0.05$). P values between groups A, C and B were all less than 0.01, which was statistically significant. 4. ANOVA analysis showed that the pelvic floor muscle strength of postpartum women in the first three groups was all greater than 0.05, which was of research significance. After the experiment and four weeks after the experiment, the pelvic floor muscle strength values of postpartum women in the three groups were all higher than that before the experiment. The pelvic floor muscle strength values of group A and C were all higher than that of group B after the experiment and four weeks after the experiment, and the pelvic floor muscle strength values of group C were all higher than that of group A after the experiment and four weeks after the experiment. **Conclusion:** The three training programs in the experiment can all improve the symptoms of postpartum stress urinary incontinence in women, and to some extent can improve the muscle strength of pelvic floor. Pilates is better than Baduanjin training, and

Pilates combined with Baduanjin training has the best effect. In the future personal trainer training process, we should pay attention to the combination of Chinese and Western, diversification, individualization and refinement, improve the professional quality level of coaches, and scientifically guide postpartum women to carry out rehabilitation exercise in today's three-child comprehensive opening. At the same time, the society and the family should also pay attention to and strengthen the cognitive level of postpartum women, so that they are aware of the importance of pelvic floor muscle repair. Finally, the hospital should increase the cooperation with fitness clubs and studios, and provide high-quality private customized services according to the needs of customers to ensure that puerpera can get targeted treatment and rehabilitation. Due to the particularity of the experimental subjects, the sample size of this experiment is small, which is the limitation of this experiment.

Key words: Pilates, Baduanjin, Postpartum women, Stress urinary incontinence